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THE IBIS,

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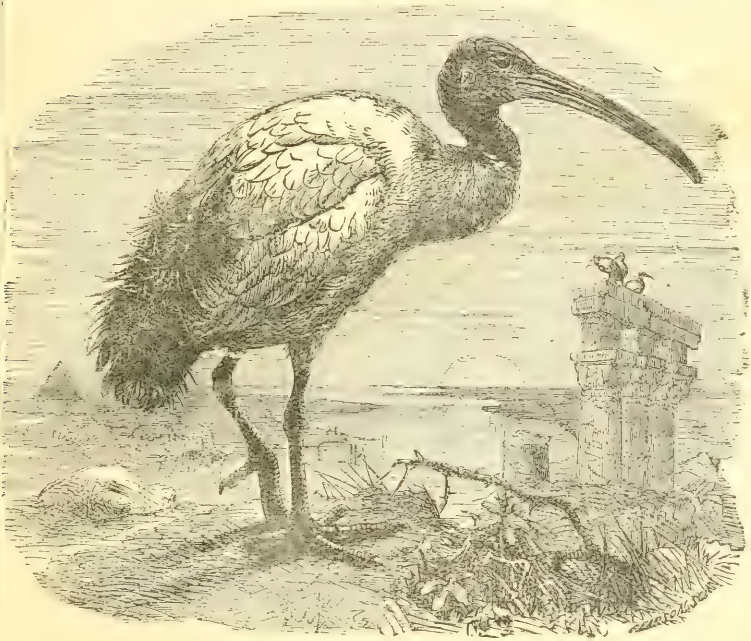
EDITED BY

WILLIAM LUTLEY SCLATER, M.A., F.Z.S.



VOL. I. 1913.

TENTH SERIES.

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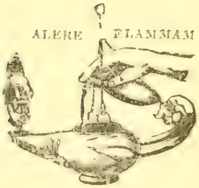
Delectasti me, Domine, in operibus manuum tuarum.

LONDON:
R. H. PORTER, 7 PRINCES STREET, CAVENDISH SQUARE W.
1913.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,, II. ,, April 2nd.
,, III. ,, July 1st.
,, IV. ,, October 6th.

LIST OF THE MEMBERS

OF THE

BRITISH ORNITHOLOGISTS' UNION.

1913.

[An asterisk indicates an Original Member. It is particularly requested that Members should give notice to the Secretary of the Union of any error in their addresses or descriptions in this List, in order that it may be corrected.]

Date of Election.

1911. Alexander, Christopher James; International Institute of Agriculture, Rome, Italy.

1911. Alexander, Horace Gundry; King's College, Cambridge; and 3 Mayfield Road, Tunbridge Wells, Kent.

1888. Aplin, Oliver Vernon; Stonehill House, Bloxham, Oxon.

1896. Archibald, Charles F.; 2 Darnley Road, West Park, Leeds, Yorks.

5 1896. Arrigoni degli Oddi, Count Ettore, Professor of Zoology, University, Padua; and Ca' oddo, Monselice, Padua, Italy.

1901. Arundel, Major Walter B., F.Z.S.; High Ackworth, Pontefract, Yorks.

1901. Ashby, Herbert; Broadway House, Brookvale Road, Southampton.

1908. Ashworth, Dr. John Wallwork, M.R.C.S., L.R.C.P., F.R.G.S., F.G.S.; Thorne Bank, Heaton Moor, near Stockport, Cheshire.

1897. Astley, Hubert Delaval, M.A., F.Z.S.; Benham Park, Newbury, Berks.

10 1885. Backhouse, James, F.Z.S.; The Red House, Knaresborough, Yorks.

1904. Bahr, Philip Heinrich, M.A., M.B., M.R.C.S., L.R.C.P., F.Z.S.; Perrysfield House, Oxted, Surrey.

1901. Bailward, Col. Arthur Churchill, F.Z.S. (R.F.A.); 64 Victoria Street, S.W.

1892. Baker, E. C. Stuart, F.Z.S.; 6 Harold Road, Upper Norwood, S.E. (*Hon. Secretary and Treasurer.*)

Date of Election.

1901. Baker, John C., M.B., B.A.; Ceely House, Aylesbury, Bucks.

15 1908. Ball, Crispin Alfred (Sudan Civil Service); Geteina, White Nile Province, Sudan.

1889. Balston, Richard James, F.Z.S.; Springfield, Maidstone, Kent.

1906. Bannerman, David A., B.A.; 11 Washington House, Basil Street, S.W.

1890. Barclay, Francis Hubert, F.Z.S.; The Warren, Cromer, Norfolk.

1885. Barclay, Hugh Gurney, F.Z.S.; Colney Hall, Norwich, Norfolk.

20 1889. Barrett-Hamilton, Major Gerald E. H., F.Z.S.; Kilmanock, Campile, Waterford, Ireland.

1881. Barrington, Richard Manliffe, LL.D.; Fassaroe, Bray, Co. Wicklow, Ireland.

1903. Bartels, Max.; Pasir Datar, Halte Tjisaät (Preanger), Java, Dutch East Indies.

1906. Bates, George L., C.M.Z.S.; Bitye, Ebolowa, Kamerun, West Africa.

1912. Baxendale, Francis Richard Salisbury; Commissioner of Famagusta, Cyprus.

25 1913. Baynes, George Kenneth; 120 Warwick Street, S.W.

1912. Beebe, C. William, C.M.Z.S.; Curator of Birds, New York Zoological Park, New York, U.S.A.

1910. Beeston, Harry; Sunnymead, South Street, Havant, Hants.

1897. Benson, John; The Post Office, Vancouver, B.C.

1897. Berry, William, B.A., LL.B.; Tayfield, Newport, Fifeshire.

30 1907. Bethell, The Hon. Richard; 30 Hill Street, Mayfair, W.

1907. Bickerton, William, F.Z.S.; The Firs, Farraline Road, Watford, Herts.

1880. Bidwell, Edward; 1 Trig Lane, Upper Thames Street, E.C.

1892. Bird, The Rev. Maurice C. H., M.A.; Brunstead Rectory, Stalham, S.O., Norfolk.

1891. Blaauw, Frans Ernst, C.M.Z.S.; Gooilust, 'sGraveland, Hilversum, Noord-Holland.

35 1913. Blackwood, George Glendinning; 2 Bellevue Crescent, Edinburgh.

1912. Blaine, Gilbert, F.Z.S.; 5 a The Albany, Piccadilly, W.

1903. Blathwayt, The Rev. Francis Linley, M.A.; Doddington Rectory, Lincoln.

1897. Bonar, The Rev. Horatius Ninian, F.Z.S.; Saltoun, Pencaitland, N.B.

Date of Election.

1905. Bone, Henry Peters, F.Z.S.; 28 Adelaide Crescent, Brighton.

40 1894. Bonhote, John Lewis, M.A., F.L.S., F.Z.S.; Zoological Gardens, Giza, Egypt; and Gade Spring Lodge, Hemel Hempstead, Herts.

1906. Boorman, Staines; Heath Farm, Send, Woking, Surrey.

1898. Booth, George Albert; Whalley Range, Longton, Lancs.

1904. Booth, Harry B.; Ryhill, Ben Rhydding, *viâ* Leeds, Yorks.

1908. Borrer, Clifford Dalison; 6 Durham Place, Chelsea, S.W.

45 1910. Brabourne, Wyndham Wentworth, Lord, F.Z.S.; 19 Curzon Street, Mayfair, W.

1895. Bradford, Sir John Rose, K.C.M.G., M.D., D.Sc., F.R.S., F.Z.S; 8 Manchester Square, W.

1902. Bridgeman, Commdr. The Hon. Richard O. B., R.N.; H.M.S. 'Druid,' 1st Destroyer Flotilla, Home Fleet.

1909. Briggs, Thomas Henry, M.A., F.E.S.; Rock House, Lynmouth, R.S.O., N. Devon.

1902. Bristowe, Bertram Arthur; The Cottage, Stoke D'Abernon, Cobham, Surrey.

50 1885. Brockholes, William Fitzherbert; Claughton-on-Brock, Garstang, Lancashire.

1908. Brook, Edward Jonas, F.Z.S.; Hoddam Castle, Ecclefechan, N.B.

1890. Brooke, Harry Brinsley; 33 Egerton Gardens, S.W.

1899. Brooke, John Arthur, J.P.; Fenay Hall, Huddersfield; and Fearn Lodge, Ardgay, Ross-shire.

1912. Brown, Thomas Edward; c/o Messrs. G. Beyts & Co., Port Tewfik, Suez, Egypt.

55 1900. Bruce, William Speirs, LL.D., F.R.S.E.; Scottish Oceanographical Laboratory, Surgeon's Hall, Edinburgh.

1907. Buckley, Charles Mars; 4 Hans Crescent, S.W.

1906. Bucknill, John Alexander Strachey, K.C., M.A., F.Z.S.; Attorney General, Hong Kong, China.

1895. Bulgaria, H.M. Ferdinand, King of, F.Z.S.; The Palace, Sofia, Bulgaria.

1908. Bunyard, Percy Frederick, F.Z.S.; 57 Kidderminster Road, Croydon, Surrey.

60 1907. Butler, Arthur Gardiner, Ph.D., F.L.S., F.Z.S.; 124 Beckenham Road, Beckenham, Kent.

1899. Butler, Arthur Lennox, F.Z.S.; Superintendent of Game Preservation, Sudan Government, Khartum, Sudan.

Date of Election.

1884. Butler, Lieut.-Col. E. A.; Winsford Hall, Stokesby, Great Yarmouth.

1900. Buttress, Bernard A. E.; Craft Hill, Dry Drayton, Cambridge.

1905. Buxton, Anthony; Knighton, Buckhurst Hill, Essex.

65 1884. Buxton, Geoffrey Fowell, F.Z.S.; Dunston Hall, Norwich, Norfolk.

1912. Buxton, Patrick Alfred; Fairhill, Tonbridge, Kent.

1889. Cameron, Ewen Somerled, F.Z.S.; Marsh P.O., Montana, U.S.A.

1896. Cameron, Capt. James S.; (2nd Bn. Royal Sussex Regt.) Low Wood, Bethersden, Ashford, Kent.

1888. Cameron, John Duncan; Low Wood, Bethersden, Ashford, Kent.

70 1909. Campbell, David Callender, J.P.; Templemore Park, Londonderry, Ireland.

1909. Carroll, Clement Joseph; Rocklow, Fethard, Co. Tipperary, Ireland.

1904. Carruthers, Alexander Douglas M.; Little Munden Rectory, Ware, Herts.

1908. Carter, Thomas; Wensleydale, Broome Hill (Great Southern Railway), Western Australia.

1890. Cave, Charles John Philip, M.A., F.Z.S.; Ditcham Park, Petersfield, Hants.

75 1913. Chaplin, Nugent; The Lodge, Bourne End, Bucks.

1881. Chapman, Abel, F.Z.S.; Houxty, Wark-on-Tyne, Northumberland.

1882. Chase, Robert William; St. Brelâde, King's Norton, Worcestershire.

1908. Cheesman, Robert E.; The Vents, Cranbrook, Kent.

1897. Cholmley, Alfred John, F.Z.S.; Place Newton, Rillington, Yorks.

80 1910. Chubb, Charles, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

1912. Clark, George Wingfield; 2 Devana Terrace, Huntingdon Road, Cambridge.

1904 Clarke, Capt. Goland van Holt, D.S.O., F.Z.S.; Chilworth Court, Romsey, Hants.

1889. Clarke, Col. Stephenson Robert, C.B., F.Z.S.; Borde Hill, Cuckfield, Sussex.

1880. Clarke, William Eagle, F.L.S.; Royal Scottish Museum, Edinburgh.

Date of Election.

85 1904. COCHRANE, Captain HENRY LAKE, R.N.; 10 Ashburton Road, Southsea, Hants.

1898. COCKS, ALFRED HENEAGE, M.A., F.Z.S.; Poynetts, Skirmett, near Henley-on-Thames, Oxon.

1895. COLES, RICHARD EDWARD; Ashley Arnewood, New Milton, S.O., Hants.

1911. COLLETT, ANTHONY KEELING; 5 Stone Buildings, Lincoln's Inn, W.C.

1904. COLLIER, CHARLES, F.Z.S.; Bridge House, Culmstock, Devon; and Windham Club, St. James' Square, S.W.

90 1909. CONGREVE, WILLIAM MAITLAND (Lieut. R.A.); c/o R. Moody, Esq., Springfield, Hereford.

1910. CONIGRAVE, CHARLES PRICE, F.R.G.S., R.A.O.U.; c/o Department of Agriculture, Perth, Western Australia.

1913. COOK, JAMES PEMBERTON; c/o Messrs. Wallace Bros., Ltd., 4 Crosby Square, Bishopsgate, E.C.

1888. CORDEAUX, Major WILLIAM WILFRID, (late 21st Lancers), Hopebourne, Harbledown, Canterbury, Kent.

1913. COWAN, FRANCIS; Westerlea, Murrayfield, Midlothian.

95 1896. COWIE, Col. ALEXANDER HUGH, F.Z.S.; Uddens House, Wimborne, Dorset.

1894. CREWE, Sir VAUNCEY HARPUR, Bt.; Calke Abbey, Derby.

1903. CROWLEY, JOHN CYRIL, M.A.; 5 Beech House Road, Croydon, Surrey.

1898. CROWLEY, REGINALD ALWYN; Bernards, Vines Cross, Sussex.

1899. CURTIS, FREDERICK, F.R.C.S.; Lyndens, Redhill, Surrey.

100 1877. DALGLEISH, JOHN J.; Brankston Grange, Bogside Station, Alloa, N.B.

1896. DANFORD, Capt. BERTRAM W. Y., R.E.; Bermuda.

1897. DARNLEY, IVO FRANCIS WALTON, Earl; Cobham Hall, Gravesend, Kent; and Clifton Lodge, Athboy, Co. Meath, Ireland.

1883. DAVIDSON, JAMES, F.Z.S.; 32 Drumsheugh Gardens, Edinburgh.

1908. DAVIES, CLAUDE G.; 'E' Squadron, Cape Mounted Riflemen, Matatiele, E. Griqualand, South Africa.

105 1905. DAVIS, KENNETH JAMES ACTON; Julian Hill, Harrow; and King's College, Cambridge.

1909. DELMÉ-RADCLIFFE, Capt. ALFRED (105th Maratha Light Infantry); c/o Messrs. Cox & Co., Bombay, India.

1902. DENT, CHARLES HENRY; c/o Messrs. Barclay & Co. Ltd., Darlington, Durham.

Date of
Election.

1891. De Vis, Charles W.; c/o Messrs. Quaritch, 11 Grafton Street, W.

1893. De Winton, William Edward, F.Z.S.; Southover Hall, Burwash, Sussex.

110 1896. Dobbie, James Bell, F.R.S.E., F.Z.S.; 12 South Inverleith Terrace, Edinburgh.

1889. Dobie, William Henry, M.R.C.S.; 2 Hunter Street, Chester.

1911. Dodsworth, Pelham Theobald Landale, F.Z.S.; Samton, Simla, W., (Punjab), India.

1913. Doig, Capt. John Alexander (late Scottish Borderers); Myall House, Farnham Common, Bucks. (Died May 5, 1913.)

1904. Dorrien-Smith, Thomas Algernon, J.P., D.L.; Tresco Abbey, Scilly Isles.

115 1904. Drake-Brockman, Dr. Ralph Evelyn, M.R.C.S., L.R.C.P., F.Z.S.; Cheriton, 26 Portchester Road, Bournemouth, Hants.

1865. Dresser, Henry Eeles, F.L.S., F.Z.S.; Athenæum Club, Pall Mall, S.W.

1896. Drewitt, Frederic Dawtrey, M.A., M.D., F.Z.S.; 14 Palace Gardens Terrace, Kensington, W.

1913. Drummond, James, F.L.S., F.Z.S.; 'Lyttelton Times,' Christchurch, New Zealand.

1890. Drummond-Hay, Col. James A. G. R.- (Coldstream Guards); Seggieden, by Perth, N.B.

120 1904. Duckworth, George Herbert; Philpots, East Grinstead, Sussex.

1878. Durnford, W. Arthur, J.P.; Elsecar, Barnsley, Yorks.

1905. Dutton, The Hon. and Rev. Canon Frederick George; Bibury, Fairford, Gloucestershire.

1903. Earle, Edward Vavasour; 6 Broad Street Place, E.C.

1895. Elliot, Edmund A. S., M.R.C.S.; Woodville, Kingsbridge, South Devon.

125 1884. Elliott, Algernon, C.I.E.; 16 Belsize Grove, Hampstead, N.W.

1902. Ellison, The Rev. Allan, M.A.; Althorpe Rectory, Doncaster, Yorks.

1904. Elton, Henry Brown, B.A., M.B., B.C., M.R.C.S., L.R.C.P.; Glenview, Llandovery, South Wales.

1866. Elwes, Henry John, F.R.S., F.Z.S.; Colesborne, Cheltenham, Gloucestershire.

Date of Election.

1879. Evans, Arthur Humble, M.A., F.Z.S.; 9 Harvey Road, Cambridge.

130 1888. Evans, William, F.R.S.E.; 38 Morningside Park, Edinburgh.

1905. Ewen, Guy L'Estrange; St. James's Club, Piccadilly, W.

1892. Fairbridge, William George; 141 Long Market Street, Capetown, South Africa.

1909. Fanshawe, Capt. Richard D. (late Scots Guards); Adbury Holt, Newbury, Berks.

1894. Farquhar, Rear-Admiral Arthur Murray, C.V.O.; Granville Lodge, Aboyne, Aberdeenshire, N.B.

135 1898. Farquhar, Capt. Stuart St. J., R.N.; Naval & Military Club, Piccadilly, W.

1873. Feilden, Col. Henry Wemyss, C.B., C.M.Z.S.; Burwash, Sussex; and Junior United Service Club, S.W.

1901. Finlinson, Horace W., F.Z.S.; 5 Rosamond Road, Bedford.

1902. Flower, Capt. Stanley Smyth, F.Z.S.; Kedah House, Zoological Gardens, Giza, Egypt.

1912. Floyd, James Francis Murray, B.A.; The University, Glasgow.

140 1884. Forbes, Henry Ogg, LL.D., F.Z.S.; Redcliffe, Beaconsfield, Bucks.

1912. Foster, Arthur H., M.R.C.S., L.R.C.P.; Sussex House, 88 Tilehouse Street, Hitchin, Herts.

1903. Foster, Nevin Harkness, F.L.S., M.R.I.A.; Hillsborough, Co. Down, Ireland.

1880. Foster, William; 39 Colville Gardens, Bayswater, W.

1887. Fowler, William Warde, M.A.; Lincoln College, Oxford.

145 1865. Fox, The Rev. Henry Elliott, M.A.; The Croft, Lytton Grove, Putney Hill, S.W.

1881. Freke, Percy Evans; Southpoint, Limes Road, Folkestone.

1895. Frohawk, Frederick William, F.E.S.; Stanley House, Park Road, Wallington, Surrey.

1909. Frost, William Edward, J.P.; Ardvreck, Crieff, Perthshire.

1881. Gadow, Hans, Ph.D., F.R.S., F.Z.S.; University Museum of Zoology, Cambridge.

150 1886. Gainsborough, Charles William Francis, Earl of; Exton Park, Oakham, Rutland.

1907. Gandolfi, Alfonso Otho Gandolfi-Hornyold, Duke, Ph.D.; Blackmore Park, Hanley Swan, Worcestershire.

Date of Election

1900. Garnett, Charles; 9 Cleveland Gardens, Hyde Park, W.; and New University Club, St. James's Street, S.W.

1892. Gerrard, John, Government Inspector of Mines; Worsley, near Manchester, Lancs.

1902. Gibbins, William Bevington, F.Z.S.; Ettington, Stratford-on-Avon, Warwickshire.

155 1879. Gibson, Ernest, F.L.S., F.Z.S., F.R.G.S.; 25 Cadogan Place, S.W.

1902. Gillman, Arthur Riley; Heath Vale, Farnham, Surrey.

1903. Gladstone, Hugh Steuart, M.A., F.Z.S., F.R.S.E., F.S.A. Scot.; Capenoch, Thornhill, Dumfriesshire.

1908. Godman, Capt. Edward Shirley (2nd Dorset Regiment); Muntham, Horsham, Sussex.

* 1858. Godman, Frederick DuCane, D.C.L., F.R.S., F.Z.S.; 45 Pont Street, S.W.; and South Lodge, Horsham, Sussex. (*Gold Medallist.*)

160* 1858. Godman, Percy Sanden, B.A., C.M.Z.S.; Muntham, Horsham, Sussex. (*Gold Medallist.*)

1906. Goodall, Jeremiah Matthews, F.Z.S.; 52 Oxford Gardens, North Kensington, W.

1901. Goodchild, Herbert; 66 Gloucester Road, Regent's Park, N.W.

1900. Goodfellow, Walter, F.Z.S.; The Poplars, Kettering, Northants.

1906. Gordon, Seton Paul, F.Z.S.; Auchintoul, Aboyne, Aberdeenshire, N.B.

165 1912. Gosse, Philip, M.R.C.S., L.R.C.P.; Curtlemead, Beaulieu, Hants.

1899. Gould, Francis Herbert Carruthers, F.Z.S.; Matham Manor House, East Molesey, Surrey.

1895. Grabham, Oxley, M.A.; The Museum, York.

1909. Grant, Claude Henry Baxter, F.Z.S.; Sports Club, St. James' Street, S.W.

1913. Greening, Linnæus, F.L.S., F.Z.S.; Fairlight, Grappenhall, Cheshire.

170 1909. Grey, The Rt. Hon. Sir Edward, Bt., P.C., F.Z.S.; Falloden, Christon Bank, R.S.O., Northumberland.

1906. Griffith, Arthur Foster; 59 Montpellier Road, Brighton, Sussex.

1885. Guillemard, Francis Henry Hill, M.A., M.D., F.Z.S.; Old Mill House, Trumpington, Cambridge.

Date of Election.

1913. Gunning, Dr. Jan Willem Boudewyn, F.Z.S.; Director of the Transvaal Museum and Zoological Gardens, Pretoria, South Africa. (Died June 23, 1913.)

1908. Gurney, Gerard Hudson, F.Z.S., F.E.S.; Keswick Hall, Norwich, Norfolk.

175 1870. Gurney, John Henry, F.Z.S.; Keswick Hall, Norwich; and Athenæum Club, Pall Mall, S.W.

1896. Gurney, Robert, F.Z.S.; Ingham Old Hall, Stalham, Norfolk.

1890. Gwatkin, Joshua Reynolds Gascoign; The Manor House, Potterne, Devizes, Wilts.

1891. Haigh, George Henry Caton; Grainsby Hall, Great Grimsby, Lincolnshire.

1887. Haines, John Pleydell Wilton; 17 King Street, Gloucester.

180 1898. Hale, The Rev. James Rashleigh, M.A.; Boxley Vicarage, Maidstone, Kent.

1905. Hamerton, Major Albert Edward, D.S.O., R.A.M.C., F.Z.S.; c/o Messrs. Holt & Co., 3 Whitehall Place, S.W.

1913. Hardy, Capt. Ernest Clifford, R.N.; H.M.S. 'Hearty,' c/o G.P.O., London, E.C.

1904. Harington, Major Herbert Hastings; 72nd Punjabis, Peshawar, N. W. F. P., India; and c/o Messrs. Thos. Cook & Sons, Ludgate Circus, E.C.

1900. Harper, Edmund William, F.Z.S.; c/o Messrs. Wardle & Co., Nairobi, British East Africa.

185 1900. Harris, Henry Edward; 2 St. Aubyn's Mansions, Hove, Sussex.

1893. Hartert, Ernst J. O., Ph.D., F.Z.S.; The Zoological Museum, Tring, Herts. (*Committee.*)

1868. Harting, James Edmund, F.L.S., F.Z.S.; Edgewood, Weybridge, Surrey.

1893. Hartmann, William; Milburn, Esher, Surrey.

1899. Harvey, Major Robert Napier, R.E.; 1 Staff Quarters, Brompton Barracks, Chatham.

190 1873. Harvie-Brown, John A., LL.D., F.R.S.E., F.Z.S.; Dunipace, Larbert, Stirlingshire, N.B.

1900. Hasluck, Percy Pedley Harford; The Wilderness, Southgate, N.

1902. Hatfeild, John Randall; Edlington Hall, Horncastle, Lincolnshire.

1898. Hawker, Richard Macdonnell, F.Z.S.; Bath Club, Dover Street, W.; and c/o Messrs. Dalgety & Co., 96 Bishopsgate Street Within, E.C.

Date of Election.

1905. Hawkshaw, John Clarke, M.A., M.I.C.E., F.G.S.; Hollycombe, Liphook, Hants; and 33 Great George Street, Westminster, S.W.

195 1905. Headley, Frederick Webb, M.A., F.Z.S.; Haileybury College, Hertford.

1905. Hellmayr, Carl E.; Wittelsbacherstrasse 2 III., Munich, Germany.

1902. Hett, Geoffrey Seccombe, M.B., F.Z.S.; 8 Wimpole Street, W.

1913. Hewitt, John, M.A.; Director of the Albany Museum Grahamstown, South Africa.

1899. Heywood, Richard, F.Z.S.; Narside, Narborough, Swaffham, Norfolk.

200 1900. Hills, John Waller,; Queen Anne's Mansions, Westminster, S.W.; and Highhead Castle, Carlisle, Cumberland.

1884. Holdsworth, Charles James, J.P.; Fernhill, Alderley Edge, Cheshire.

1912. Hony, George Bathurst; 8 Christs Lane, Cambridge.

1905. Hopkinson, Emilius, M.B., D.S.O., F.Z.S.; 45 Sussex Square, Brighton, Sussex; and Bathurst, Gambia, West Africa.

1904. Horsbrugh, Major Boyd Robert, F.Z.S.; c/o Messrs. Cox & Co., 16 Charing Cross, S.W.

205 1888. Horsfield, Herbert Knight; Crescent Hill, Filey, Yorks.

1895. Howard, Henry Eliot, F.Z.S.; Clarelands, near Stourport, Worcestershire.

1881. Howard, Robert James; Shearbank, Blackburn, Lancashire.

1911. Hudson, Edward; 15 Queen Anne's Gate, S.W.

1911. Hudson, Reginald; 16 Warwick Road, Stratford-on-Avon.

210 1901. Ingram, Collingwood, F.Z.S.; Sussex Mansions, Westgate-on-Sea, Kent.

1902. Innes Bey, Dr. Walter Francis; Curator of the Zoological Museum, School of Medicine, Cairo, Egypt.

1913. Iredale, Tom; 8 Earl's Court Gardens, S.W.

1888. Jackson, Sir Frederick John, C.B., K.C.M.G., F.L.S., F.Z.S.; Entebbe, Uganda, British East Africa; and The Red House, Aldeburgh, Suffolk.

1892. James, Henry Ashworth, F.Z.S.; Hurstmonceux Place, Hailsham, Sussex.

215 1896. Jesse, William, B.A., F.Z.S.; Meerut College, Meerut, India.

1889. Johnson, Frederick Ponsonby, B.A., J.P., D.L.; Castlesteads, Brampton, Cumberland.

Date of Election.

1891. Johnston, Sir Harry Hamilton, G.C.M.G., K.C.B., F.Z.S.; St. John's Priory, Poling, near Arundel, Sussex.

1905. Johnstone, Edwin James, F.Z.S.; Burrswood, Groombridge, Sussex; and Junior Carlton Club, Pall Mall, S.W.

1900. Jones, Major Henry, F.Z.S. (late 62nd Regt.); East Wickham House, Welling, Kent.

220 1909. Jones, Staff-Surgeon Kenneth Hurlstone, M.B., Ch.B., F.Z.S., R.N.; The Manor House, St. Stephen's, Canterbury, Kent.

1899. Jourdain, The Rev. Francis Charles Robert, M.A.; Clifton Vicarage, near Ashburne, Derbyshire.

1902. Joy, Norman Humbert, M.R.C.S., L.R.C.P.; Thurlestone, Bradfield, near Reading, Berks.

1880. Kelham, Brigadier-General Henry Robert, C.B. (late Highland Light Infantry); Fremington House, Fremington, N. Devon.

1894. Kelsall, Major Harry Joseph, R.A.; c/o J. W. Jameson, Esq., Langham Lea, Bowdon, Cheshire.

225 1897. Kelsall, The Rev. John Edward, M.A.; Milton Rectory, New Milton, Hants.

1904. Kelso, John Edward Harry, M.D.; Holmwood, Hayling Island, Hants.

1891. Kerr, John Graham, F.R.S., F.Z.S., Regius Professor of Zoology, 9 The University, Glasgow.

1895. Kingsford, William Edward; Cairo, Egypt.

1902. Kinnear, Norman Boyd, C.M.Z.S.; Bombay Natural History Society, 6 Apollo Street, Bombay, India.

230 1910. Kloss, Cecil Boden, F.Z.S., F.R.A.I.; Kuala Lumpur, Federated Malay States.

1900. Koenig, Dr. Alexander Ferdinand; Coblenzer-Strasse 164, Bonn, Germany.

1906. Kollibay, Paul; Ring 121, Neisse, Germany.

1892. Laidlaw, Thomas Geddes; Bank of Scotland House, Duns, N.B.

1913. Lambert, Godfrey Charles; Woodcote, Esher, Surrey.

235 1884. Langton, Herbert; St. Moritz, 61 Dyke Road, Brighton, Sussex.

1881. Lascelles, The Hon. Gerald William, F.Z.S.; The King's House, Lyndhurst, Hants.

1892. La Touche, John David Digues, C.M.Z.S.; c/o Custom House, Chinwangtao, North China (*viâ* Siberia).

Date of
Election.

1910. Lees, T. O. Hastings, M.A., F.Z.S.; 4 Osnaburgh Terrace, Regent's Park, N.W.

1905. Legge, The Hon. Gerald; c/o Messrs. Hoare, 37 Fleet Street, E.C.

240 1906. Leigh, John Hamilton, F.Z.S.; Culloden House, Inverness-shire.

1898. Le Souëf, Dudley, C.M.Z.S.; Director of the Zoological Gardens, Melbourne, Victoria, Australia.

1868. Le Strange, Hamon, F.Z.S.; Hunstanton Hall, King's Lynn, Norfolk; and 1 Eaton Place, Eaton Square, S.W.

1889. Leyland, Christopher John, F.Z.S.; Haggerston Castle, Beal, Northumberland.

1897. Lilford, John, Lord, F.Z.S.; Lilford Hall, Oundle, Northants.

245 1909. Lings, George Herbert; 208 Piermont Avenue, Nyack, N.Y., U.S.A.

1897. Lodge, George Edward, F.Z.S.; The Studios, 5 Thurloe Square, S.W.

1908. Long, Sydney Herbert, M.D., F.Z.S.; 37 St. Giles Street, Norwich, Norfolk.

1904. Lowe, Dr. Percy R., B.A., M.B.; The Hatch, Windsor, Berks.

1902. Lucas, The Right Hon. Auberon Thomas, Lord, P.C., F.Z.S.; 32 Old Queen Street, W.

250 1904. Lynes, Captain Hubert, R.N.; H.M.S. 'Enchantress,' Portsmouth.

1900. McConnell, Frederick Vavasour; Camfield Place, Hatfield, Herts.

1905. McGregor, Peter James Colquhoun; H.M. Consul, British Consulate, Jerusalem, Palestine, Turkey-in-Asia.

1897. McLean, John Chambers; Duart, Havelock North, New Zealand.

1899. Macmillan, George Augustin, F.Z.S.; 27 Queen's Gate Gardens, S.W.

255 1906. Macmillan, William Edward Frank; 27 Queen's Gate Gardens, S.W.

1909. Macnaghten, Norman Donnelly, F.Z.S.; Ministry of the Interior, Cairo, Egypt.

1894. Macpherson, Arthur Holte, F.Z.S.; 21 Campden Hill Square, Kensington, W.

1906. Magrath, Major Henry Augustus Frederick; c/o Messrs. H. S. King & Co., 9 Pall Mall, S.W.

Date of Election.

1907. **Mann, Thomas Hugh**, F.Z.S.; Trulls Hatch, Rotherfield, Sussex.

260 1904. **Mapleton, Harvey William**, B.A.; Weare, Axbridge, Somerset.

1894. **Marshall, Archibald McLean**, F.Z.S.; Great Chitcombe, Brede, Sussex.

1894. **Marshall, James McLean**, F.Z.S.; Bleaton Hallet, Blairgowrie, Perthshire, N.B.

1897. **Mason**, Col. **Edward Snow**; 10 Lindum Terrace, Lincoln.

1898. **Massey, Herbert**; Ivy Lea, Burnage, Didsbury, Manchester.

265 1907. **Mathews, Gregory Macalister**, F.L.S., F.R.S.E., F.Z.S.; Langley Mount, Watford, Herts.

1883. **Meade-Waldo, Edmund Gustavus Bloomfield**, F.Z.S.; Stonewall Park, Edenbridge, Kent.

1913. **Meiklejohn, Kenneth Forbes** (Lieut. 1st Cameron Highlanders); The Castle, Edinburgh.

1912. **Meiklejohn**, Capt. **Ronald Forbes**, D.S.O. (Royal Warwickshire Regt.); 30 Rutland Square, Edinburgh.

1899. **Meinertzhagen**, Capt. **Richard**, F.Z.S. (Royal Fusiliers); c/o Messrs. Cox & Co., 16 Charing Cross, S.W.

270 1886. **Millais, John Guille**, F.Z.S.; Compton's Brow, Horsham, Sussex.

1903. **Mills**, The Rev. **Henry Holroyd**, M.A., F.Z.S.; The Rectory, St. Stephen-in-Brannel, Grampound Road, Cornwall.

1879. **Mitchell, Frederick Shaw**; Hornshaws, Millstream, Vancouver, British Columbia.

1901. **Mitchell, P. Chalmers**, M.A., D.Sc., LL.D., F.R.S., F.L.S., F.Z.S.; Secretary to the Zoological Society of London, Regent's Park, N.W.

1898. **Monro, Horace Cecil**, C.B.; Queen Anne's Mansions, Queen Anne's Gate, S.W.

275 1912. **Mouritz, L. Beresford**; Kuyura, Dalby, Queensland, Australia.

1886. **Muirhead, George**, F.R.S.E.; Speybank, Fochabers, Morayshire.

1893. **Mullens**, Major **William Herbert**, M.A., LL.M., F.Z.S.; Westfield Place, Battle, Sussex.

1892. **Munn, Philip Winchester**, F.Z.S.; Laverstoke, Whitchurch, Hants.

1897. **Munt, Henry**, F.Z.S.; 10 Ashburn Place, South Kensington, S.W. (*Committee.*)

Date of Election.

280 1911. Murray, Edward Mackenzie; Woodside, Coupar-Angus, Perthshire.

1910. Murray, Herbert Willaume, F.Z.S.; The Old House, Epsom, Surrey.

1900. Musters, John Patricius Chaworth, D.L., J.P.; Annesley Park, Nottingham.

1907. Neave, Sheffield Airey, M.A., B.Sc., F.Z.S.; Mill Green Park, Ingatestone, Essex.

1882. Nelson, Thomas Hudson; Seafield, Redcar, Yorkshire.

285 1895. Nesham, Robert, F.Z.S., F.E.S.; Utrecht House, Queen's Road, Clapham Park, S.W.

1904. Newman, Thomas Henry, F.Z.S.; Newlands, Harrowdene Road, Wembley, Middlesex.

1902. Nichols, John Bruce, F.Z.S.; Parliament Mansions, Victoria Street, S.W.

1900. Nichols, Walter Buchanan; Stour Lodge, Bradfield, Manningtree, Essex.

1876. Nicholson, Francis, F.Z.S.; The Knoll, Windermere, Westmoreland.

290 1902. Nicoll, Michael John, F.Z.S.; Valhalla House, Zoological Gardens, Giza, Egypt.

1904. Noakes, Wickham; Selsdon Park, Croydon, Surrey.

1892. Ogilvie, Fergus Menteith, M.A., F.Z.S.; The Shrubbery, 72 Woodstock Road, Oxford.

1890. Ogilvie-Grant, William Robert, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

1889. Ogle, Bertram Savile; Hill House, Steeple Aston, Oxford.

295 1907. Oldham, Charles, F.Z.S.; Kelvin, Boxwell Road, Berkhamsted, Herts.

1906. Osmaston, Bertram Beresford (Imperial Forest Service); Naini Tal, India.

1913. Owen, John Hugh; Old School House, Felsted, Essex.

1883. Parker, Henry, C.E.; 26 St. George's Road, St. Annes-on-the-Sea, Lancs.

1880. Parkin, Thomas, M.A., F.L.S., F.Z.S.; Fairseat, High Wickham, Hastings, Sussex.

300 1908. Paton, Edward Richmond, F.Z.S.; Brookdale, Grassendale, near Liverpool, Lancs.

1891. Patterson, Robert, F.L.S., M.R.I.A.; Glenbank, Holywood, Co. Down, Ireland.

Date of Election.

1911. Patterson, William Harry; 25 Queen's Gate Gardens, S.W.

1904. Pearse, Theed; Hartney Chambers, 347 Pender Street, W., Vancouver, British Columbia.

1894. Pearson, Charles Edward, F.L.S.; Hillcrest, Lowdham, Notts.

305 1902. Pease, Sir Alfred Edward, Bt., F.Z.S.; Pinchinthorpe House, Guisborough, Yorkshire; and Brooks's Club, St. James's Street, S.W.

1898. Penn, Eric Frank; 42 Gloucester Square, W.

1891. Penrose, Francis George, M.D., F.Z.S.; c/o Mr. E. A. Porter, 7 Princes Street, Cavendish Square, W.

1900. Percival, Arthur Blayney, F.Z.S.; Game-Ranger, Nairobi, British East Africa.

1912. Pershouse, Capt. Stanley (1st Border Regt.); B 1 Lines, Mandalay, Burma; and Passfield House, Liphook, Hants.

310 1886. Phillips, Ethelbert Lort, F.Z.S.; 79 Cadogan Square, S.W.

1893. Pigott, Sir Thomas Digby, K.C.B.; The Lodge, Lower Sheringham, Norfolk.

1908. Player, W. J. Percy; The Quarr, Clydach, R.S.O., Glamorganshire.

1907. Pocock, Reginald Innes, F.R.S., F.L.S., F.Z.S.; Superintendent of the Zoological Gardens, Regent's Park, N.W.

1905. Pollard, Capt. Arthur Erskine St. Vincent (The Border Regiment); Haynford Hall, Norwich, Norfolk.

315 1896. Popham, Hugh Leyborne, M.A.; Hunstrete House, Pensford, near Bristol, Gloucestershire.

1898. Price, Athelstan Elder, F.Z.S.; 4 Mincing Lane, E.C.

1903. Proctor, Major Frederick William (late West Riding Regt.); Downfield, Maidenhead, Berks.

1901. Proud, John T.; Dellwood, Bishop Auckland, Durham.

1893. Pycraft, William Plane, F.Z.S.; British Museum (Natural History), Cromwell Road, S.W.

320 1903. Ralfe, Pilcher George; The Parade, Castletown, Isle of Man.

1903. Ratcliff, Frederick Rowlinson; 29 Connaught Square, W.

1879. Rawson, Herbert Evelyn; Comyn Hill, Ilfracombe, N. Devon.

1894. Read, Richard Henry, M.R.C.S., L.R.C.P.; Church Street, Hanley, Staffordshire.

1888. Read, Robert H.; 8*a* South Parade, Bedford Park, W.

Date of Election.

325 1877. Reid, Capt. Philip Savile Grey (late R.E.); The Elms, Yalding, Maidstone, Kent.

1903. Renaut, William E.; c/o Royal Academy of Music, Marylebone Road, N.W.

1908. Richardson, Norman Frederic, F.R.G.S.; Lynndale, Manor Road, Forest Hill, S.E.

1907. Richmond, Herbert William; King's College, Cambridge.

1895. Rickett, Charles Boughey, F.Z.S.; 27 Kendrick Road, Reading, Berks.

330 1896. Rippon, Lt.-Col. George, F.Z.S.; 89th Punjabis, P.O. Kalaw, Southern Shan States, Upper Burma.

1907. Ritchie, Archibald Thomas Ayres; Magdalen College, Oxford; and Overstrand, near Cromer, Norfolk.

1902. Rivière, Bernard Beryl, F.R.C S.; St. Giles's Plain, Norwich, Norfolk.

1898. Robinson, Herbert C., C.M.Z.S.; Selangor State Museum, Kuala Lumpur, Federated Malay States.

1912. Robinson, Herbert William, F.Z.S.Scot.; Patchetts, Caton, near Lancaster.

335 1896. Rogers, Lt.-Col. John Middleton, D.S.O., F.Z.S. (late 1st Dragoons); Riverhill, Sevenoaks, Kent.

1913. Rogers, Reginald Nankivell; Carwinion, near Falmouth, Cornwall.

1893. Rothschild, The Hon. Lionel Walter, D.Sc., Ph.D., F.R.S., F.Z.S.; The Zoological Museum, Tring, Herts.

1894. Rothschild, The Hon. Nathaniel Charles, M.A., F.Z.S.; Arundel House, Kensington Palace Gardens, W.

1910. Rücker, Sir Arthur William, M.A., D.Sc., LL.D., F.R.S.; Everington House, Newbury, Berks.

340 1907. Russell, Conrad George Edward, F.Z.S.; 2 Audley Square, W.

1910. Russell, Harold, F.Z.S.; 16 Beaufort Gardens, Chelsea, S.W.

1883. St. Quintin, William Herbert, F.Z.S.; Scampston Hall, Rillington, Yorkshire.

1903. Sandeman, Capt. Robert Preston (late 10th Hussars); Dan-y Parc, Crickhowell, Breconshire.

1889. Sapsworth, Arnold Duer, F.Z.S.; National Liberal Club, Whitehall Place, S.W.

345 1902. Sargeaunt, Arthur St. George; Exbury, Padstow, Cornwall.

Date of Election.

1904. Sargent, James; 76 Jermyn Street, S.W.

1902. Saunders, William Henry Radcliffe, C.E., F.Z.S.; 134 The Grove, Ealing, W.

1909. Savage, The Rev. Ernest Urmson; 129 Upper Canning Street, Liverpool, Lancs.

1907. Schwann, Geoffrey; 11 Onslow Gardens, S.W.

350 1905. Schwann, Harold, F.Z.S.; 45 Brompton Square, S.W.

1891. Sclater, William Lutley, M.A., F.Z.S.; 10 Sloane Court, Chelsea, S.W. (*Editor.*)

1907. Scott, The Rev. Canon Samuel Gilbert, M.A.; The Rectory, Havant, Hants.

1899. Selous, Frederick Courteney, F.Z.S.; Heatherside, Worplesdon, Surrey.

1889. Senhouse, Humphrey Patricius, B.A.; The Fitz, Cockermouth, Cumberland.

355 1908. Seppings, Capt. John William Hamilton; Army Pay Office, Canterbury, Kent.

1899. Serle, The Rev. William, M.A., B.D.; The Manse, Duddingston, Edinburgh.

1901. Seth-Smith, David, F.Z.S.; 34 Elsworthy Road, South Hampstead, N.W.

1904. Seth-Smith, Leslie Moffat, B.A., F.Z.S.; Alleyne, Caterham Valley, Surrey.

1909. Seton, Malcolm Cotter Cariston; 13 Clarendon Road, Holland Park, W.; and Union Club, Trafalgar Square, S.W.

360 1899. Sharman, Frederic, F.Z.S.; 47 Goldington Road, Bedford.

1865. Shepherd, The Rev. Charles William, M.A., F.Z.S.; Trottiscliffe Rectory, Maidstone, Kent.

1908. Smalley, Frederic William, F.Z.S.; Challan Hall, Silverdale, near Carnforth, Lancs.

1906. Snouckaert van Schauburg, Baron René Charles; Doorn, Holland.

1903. Sparrow, Major Richard, F.Z.S. (7th Dragoon Guards); Rookwoods, Sible Hedingham, Essex.

365 1906. Stanford, Staff-Surgeon Charles Edward Cortis, B.Sc., M.B., R.N.; H.M.S. 'Sirius,' c/o G.P.O., London, E.C.

1910. Stanford, Edward Fraser; 9 Cumberland House, Kensington Court, W.

1913. Stanford, Henry Morrant; 9 Cumberland House, Kensington Court, W.

Date of Election.

1913. Stanford, John Keith; 9 Cumberland House, Kensington Court, W.

1900. Stares, John William Chester; Portchester, Hants.

370 1902. Stenhouse, John Hutton, M.B., R.N.; H.M.S. 'Queen,' 2nd Fleet.

1910. Stevens, Herbert; Fairfield Road, Morecambe, Lancs.

1906. Steward, Edward Simmons, F.R.C.S.; 10 Prince's Square, Harrogate, Yorks.

1893. Stonham, Charles, C.M.G., F.R.C.S., F.Z.S.; 4 Harley Street, Cavendish Square, W.

1881. Studdy, Col. Robert Wright (late Manchester Regiment); Waddeton Court, Brixham, Devon.

375 1887. Styan, Frederick William, F.Z.S.; Stone Street, near Sevenoaks, Kent.

1887. Swinburne, John; Haenertsburg, Transvaal, South Africa.

1882. Swinhoe, Col. Charles, M.A., F.L.S., F.Z.S.; 6 Gunterstone Road, W. Kensington, W.

1884. Tait, William Chaster, C.M.Z.S.; Entre Quintas 155, Oporto, Portugal.

1911. Talbot-Ponsonby, Charles George; 5 Crown Office Row, Temple, E.C.

380 1911. Tatton, Reginald Arthur; Cuerden Hall, Bamber Bridge, Preston, Lancs.

1905. Taylor, Lionel Edward, F.Z.S.; Bankhead, Kelowna, British Columbia.

1886. Terry, Major Horace A. (late Oxfordshire Light Infantry); The Lodge, Upper Halliford, Shepperton, Middlesex.

1904. Thompson, William R. (Lieut. R.G.A.); 'Ravello,' Carlton Road, Weymouth, Dorset.

1911. Thomson, A. Landsborough, M.A.; Castleton House, Old Aberdeen, Aberdeen.

385 1900. Thorburn, Archibald, F.Z.S.; High Leybourne, Hascombe, near Godalming, Surrey.

1893. Thorpe, Dixon L.; Loshville, Etterby Scaur, Carlisle, Cumberland.

1903. Ticehurst, Claud Buchanan, M.A., M.D., M.R.C.S.; Grove House, Lowestoft, Suffolk.

1894. Ticehurst, Norman Frederic, M.A., M.B., F.R.C.S., F.Z.S.; 35 Pevensey Road, St. Leonards-on-Sea, Sussex. (*Committee.*)

Date of Election.

1902. Townsend, Reginald Gilliat, M.A.; Buckholt, Dean, Salisbury, Wilts.

390 1893. Trevor-Battye, Aubyn, F.Z.S.; Ashford Chace, Petersfield, Hants.; and Royal Societies Club, St. James's Street, S.W.

1913. Tuckwell, Edward Henry, F.Z.S.; Berthope, Compton, near Guildford, Surrey.

1911. Tyrwhitt-Drake, Hugh Garrard, F.Z.S.; Cobtree, Sandling, Maidstone, Kent.

1864. Upcher, Henry Morris, F.Z.S.; Sheringham Hall, Cromer, Norfolk.

1894. Ussher, Richard John, M.R.I.A.; Cappagh House, Cappagh, S.O., Co. Waterford, Ireland.

395 1907. Van Oort, Dr. Eduard Daniel; Museum of Natural History, Leyden, Holland.

1910. Van Someren, Dr. Robert Abraham Logan; Kampala, Uganda, British East Africa.

1912. Van Someren, Dr. Victor Gurnet Logan; Uganda Medical Staff, c/o Post Office, Nairobi, British East Africa.

1908. Vaughan, Matthew; Sunnylands, Milton, Pewsey, Wilts.

1906. Vaughan, Lieut. Robert E., R.N.; Lion Commercial Hotel, Portsmouth.

400 1913. Venning, Capt. Francis Esmond Wingate (31st Punjabis); Pyawbwe, Burma.

1890. Venour, Stephen; Fern Bank, Altrincham, Cheshire.

1884. Verey, Alfred Sainsbury; Heronsgate, near Rickmansworth, Herts.

1881. Verner, Col. William Willoughby Cole (late Rifle Brigade); Hartford Bridge, Winchfield, Hants; and United Service Club, S.W.

1902. Wade, Edward Walter; Middelburg, North Ferriby, East Yorks.

405 1886. Wade-Dalton, Col. H. D.; Hauxwell Hall, Finghall, R.S.O., Yorkshire.

1895. Wallis, Henry Marriage; Ashton Lodge, Christchurch Road, Reading, Berks.

1881. Walsingham, Thomas, Lord, M.A., LL.D., F.R.S., F.Z.S.; Merton Hall, Thetford, Norfolk.

1899. Walton, Major Herbert James, M.D., F.R.C.S., C.M.Z.S., I.M.S.; Medical College, Lucknow, India.

Date of Election.

1872. Wardlaw-Ramsay, Col. Robert George, F.Z.S.; Whitehill, Rosewell, Midlothian, N.B. (*President.*)

410 1896. Watkins, Watkin, F.Z.S.; 33 Evelyn Gardens, S.W.; and Wellington Club, S.W.

1903. Watt, Hugh Boyd; 12 Great James Street, Bedford Row, W.C.

1912. Wells, Charles Henry; Broomfield, 80 Brookhouse Hill, Fulwood, Sheffield, Yorks.

1912. Wenner, Max Victor; The Gables, Alderley Edge, Cheshire.

1900. Westell, W. Percival, D.Sc., F.L.S., F.R.H.S.; Verulam, Icknield Way, Letchworth, Herts.

415 1913. Whistler, Hugh (Indian Police); Jhelum, Punjab, India; and c/o Messrs. King, King & Co., Bombay, India.

1891. Whitaker, Benjamin Ingham; Hesley Hall, Tickhill, Rotherham, Yorks.

1891. Whitaker, Joseph I. S., F.Z.S.; Malfitano, Palermo, Sicily.

1909. White, Henry Luke; Belltrees, Scone, New South Wales, Australia.

1912. White, Capt. Samuel Albert; Wetunga, Fulham, South Australia.

420 1903. White, Stephen Joseph, F.Z.S.; Oakwood, Crayford, Kent.

1903. Whitehead, Capt. Charles Hugh Tempest; 56th Rifles F.F., Kohat, N.W.F.P., India.

1887. Whitehead, Jeffery; Mayes, East Grinstead, Sussex.

1897. Whymper, Charles, F.Z.S.; 11 Orange Street, Haymarket, S.W.

1912. Whymper, Samuel Leigh; Oriental Club, Hanover Square, W.

425 1898. Wigglesworth, Joseph, M.D., F.R.C.P.; Springfield House, Winscombe, Somerset.

1894. Wilkinson, Johnson; St. George's Square, Huddersfield, Yorkshire.

1912. Wilkinson, William Arthur, F.Z.S.; Dumcrieff, Tudor Hill, Sutton Coldfield, Warwickshire.

1897. Wilson, Allan Read, B.A., M.B., B.Ch.; 62 Redcliffe Road, S.W.

1888. Wilson, Charles Joseph, F.Z.S.; 34 York Terrace, Regent's Park, N.W.

430 1887. Wilson, Scott Barchard, F.Z.S.; Heatherbank, Weybridge Heath, Surrey.

Date of
Election.

1897. **Witherby, Harry Forbes**, F.Z.S.; 3 Cannon Place, Hampstead, N.W.

1908. **Witherington, Gwynne**; Aberlash, Sonning, Berks.

1899. **Wollaston, Alexander Frederick Richmond**, B.A.; Flaxburton, Bristol.

1912. **Wood, Martin Stanley**, M.D.; Cheadle Royal, Cheadle, Cheshire.

435 1912. **Woodhouse, Cecil**, M.D.; Buckland House, Esher, Surrey.

1909. **Woosnam, Richard Bowen**, C.M.Z.S.; Game Warden's Office, Nairobi, British East Africa.

1902. **Workman, William Hughes**; Lismore, Windsor, Belfast, Ireland.

1912. **Wormald, Hugh**; Heathfield, Dereham, Norfolk.

1904. **Wright, William Crawford**; Roslyn, Marlborough Park, N., Belfast, Ireland.

440 1908. **Wynne, Richard Owen**; Langley Mount, Watford, Herts.

1895. **Yerbury**, Lt.-Col. **John William** (late R.A.), F.Z.S.; 2 Ryder Street, St. James's, S.W.; and Army and Navy Club, S.W.

1889. **Young**, Capt. **James B.**, R.N.; Tytherley, Wimborne, Dorset.

Extra-Ordinary Members.

1899. **Godwin-Austen**, Lt.-Col. **Henry Haversham**, F.R.S., F.Z.S.; Nore, Hascombe, Godalming, Surrey.

1860. **Wallace, Alfred Russel**, O.M., D.C.L., LL.D., F.R.S., F.Z.S.; Broadstone, Wimborne, Dorset.

Honorary Members.

1907. **Allen, Joel Asaph**, Ph.D., F.M.Z.S.; American Museum of Natural History, Central Park, New York, U.S.A.

1890. **Berlepsch**, Graf **Hans von**, C.M.Z.S.; Schloss Berlepsch, Post Gertenbach, Witzenhausen, Germany.

1872. **Finsch**, Prof. Dr. **Otto**, C.M.Z.S.; Altewiekring 19^{B}, Brunswick, Germany.

1898. **Goeldi**, Prof. Dr. **Emil A.**, C.M.Z.S.; Zieglerstrasse 36, Berne, Switzerland.

Date of
Election.

5 1893. Reichenow, Dr. Anton, C.M.Z.S.; Museum für Naturkunde, Invalidenstrasse, Berlin, Germany.

1903. Ridgway, Robert, C.M.Z.S.; Smithsonian Institution, Washington, D.C., U.S.A.

1890. Salvadori, Count Tommaso, M.D., F.M.Z.S.; Royal Zoological Museum, Turin, Italy.

Honorary Lady Members.

1910. Bate, Miss Dorothy M. A.; Bassendean House, Gordon, Berwickshire.

1911. Baxter, Miss Evelyn Vida; Roslea, Kirkton of Largo, Fifeshire.

1910. Bedford, Mary, Duchess of, F.Z.S.; Woburn Abbey, Beds.

1910. Lemon, Mrs. Margaretta Louisa, F.Z.S.; Hillcrest, Redhill, Surrey.

5 1911. Rintoul, Miss Leonora Jeffrey; Lahill, Largo, Fifeshire.

1910. Turner, Miss Emma Louisa, F.Z.S.; Upper Birchetts, Langton Green, Tunbridge Wells, Kent.

Colonial Members.

1904. Campbell, Archibald James; Custom House, Melbourne, Australia.

1908. Farquhar, John Henry Joseph, B.Sc., N.D.A.; Assistant Conservator of Forests, Calabar, Southern Nigeria, West Africa.

1910. Fleming, James H.; 267 Rusholme Road, Toronto, Canada.

1909. Haagner, Alwin Karl, F.Z.S.; Transvaal Museum, Pretoria, South Africa.

5 1908. Hall, Robert, F.L.S., C.M.Z.S.; c/o Tasmanian Museum, Hobart, Tasmania.

1903. Legge, Col. W. Vincent; Cullenswood House, St. Mary's, Tasmania.

1905. Macoun, John, M.A., F.R.S.C.; Naturalist to the Geological Survey of Canada, Ottawa, Canada.

1903. North, Alfred J., C.M.Z.S.; Australian Museum, Sydney, New South Wales, Australia.

1907. Swynnerton, Charles Francis Massy, F.L.S.; Gungunyana, Melsetter, South Rhodesia.

Foreign Members.

Date of Election.

1909. Alphéraky, Sergius N.; Imperial Academy of Science, St. Petersburg, Russia.

1900. Bianchi, Dr. Valentine; Imperial Zoological Museum, St. Petersburg, Russia.

1880. Bureau, Louis, M.D.; École de Médecine, Nantes, France.

1906. Büttikofer, Dr. Johannes, C.M.Z.S.; Director of the Zoological Garden, Rotterdam, Holland.

5 1906. Buturlin, Sergius A.; Wesenberg, Esthonia, Russia.

1902. Chapman, Frank Michler; American Museum of Natural History, Central Park, New York, U.S.A.

1875. Doria, Marchese Giacomo, F.M.Z.S.; Strada Nuova 6, Genoa, Italy.

1902. Ihering, Dr. Herman von, C.M.Z.S.; Museu Paulista, São Paulo, Brazil.

1886. Madarász, Dr. Julius von; National Museum, Budapest, Hungary.

10 1903. Martorelli, Prof. Dr. Giacinto; Museo Civico di Storia Naturale, Milan, Italy.

1894. Menzbier, Prof. Dr. Michael, C.M.Z.S.; Imperial Society of Naturalists, Moscow, Russia.

1905. Oberholser, Harry Church; Biological Survey, Department of Agriculture, Washington, D.C., U.S.A.

1900. Reiser, Dr. Othmar; Landes Museum, Sarajevo, Bosnia, Austria.

1908. Richmond, Charles Wallace; United States National Museum, Washington, D.C., U.S.A.

15 1894. Schalow, Prof. Herman; Hohenzollerndamm 50, Berlin-Grunewald, Germany.

1900. Stejneger, Leonhard, C.M.Z.S.; Smithsonian Institution, Washington, D.C., U.S.A.

1902. Sushkin, Dr. Peter, C.M.Z.S.; Zootomisches Kabinett et Museum, The University, Kharkov, Russia.

1911. Tschusi zu Schmidhoffen, Victor, Ritter von; Villa Tännenhof, bei Hallein, Salzburg, Austria.

1896. Winge, Herluf, C.M.Z.S.; University Zoological Museum, Copenhagen, Denmark.

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A

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EDITED BY

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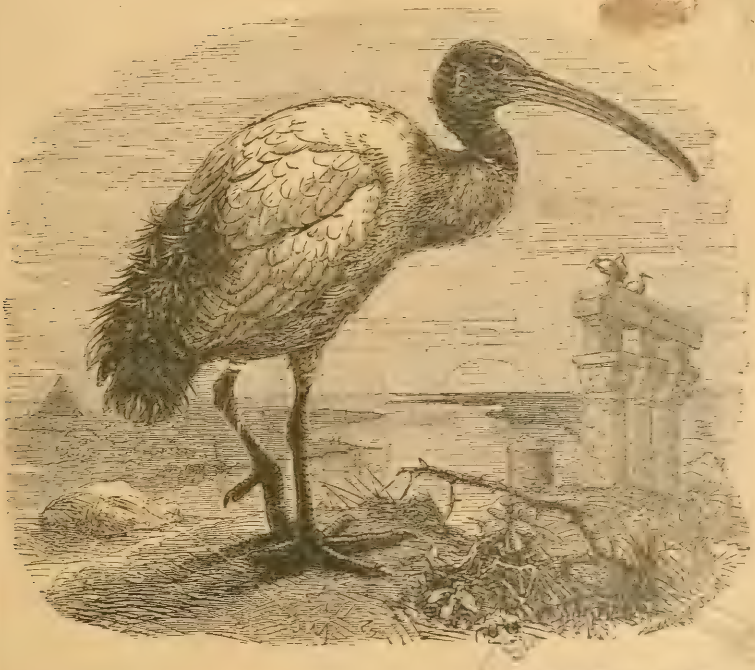

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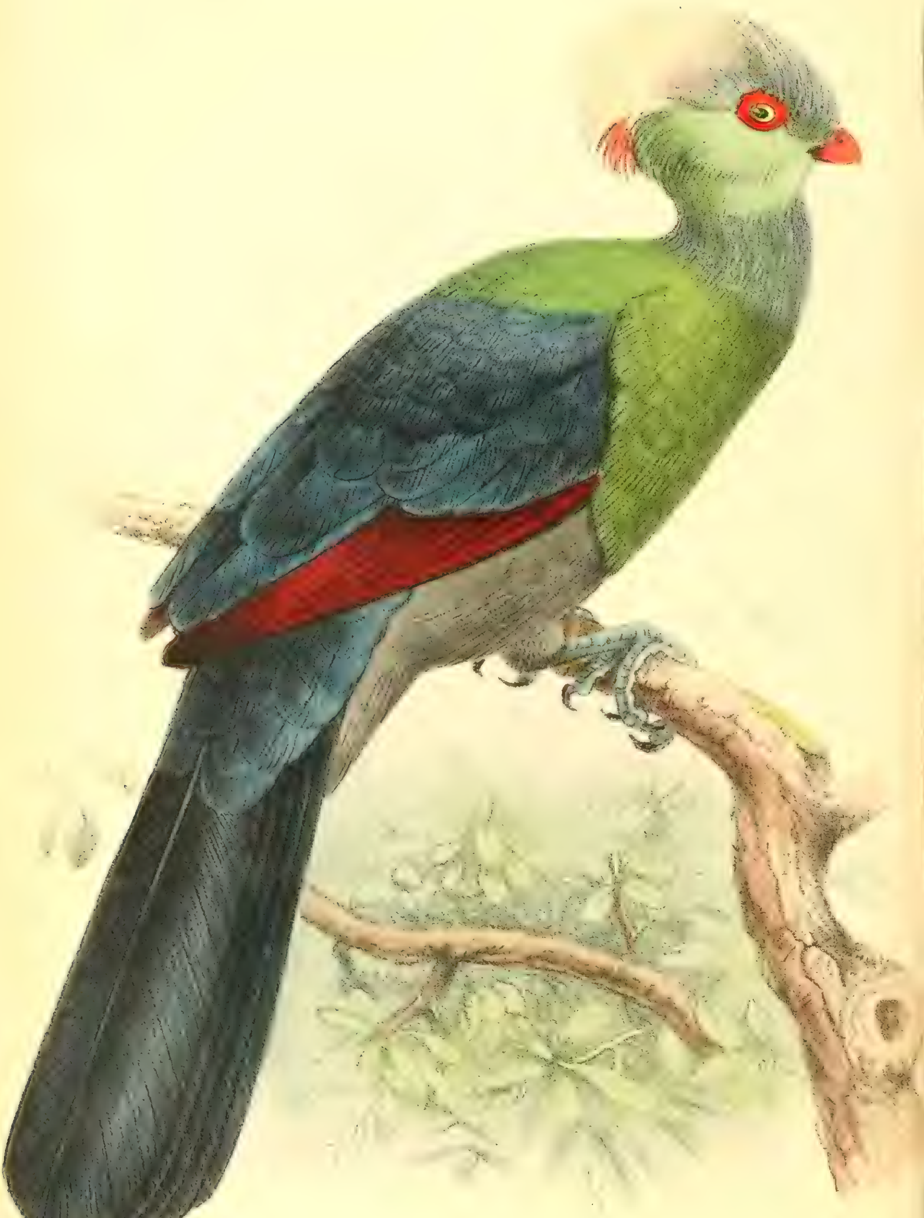

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No. I. JANUARY 1913.

I.—*On a rare Species of Touracou* (Turacus ruspolii).

By T. Salvadori, M.D., H.M.B.O.U.

(Plate I.)

Turacus ruspolii.

Turacus sp. Matschie, Journ. f. Orn. 1896, p. 94 (descriptio falsa).

Turacus ruspolii Salvad. Ann. Mus. Civ. Gen. (2) xvi. p. 44 (1896); Dubois, Syn. Av. i. p. 89, no. 1241 (1899); Sharpe, Hand-list, ii. p. 153, no. 12 (1900); Rchnw. Vög. Afr. ii. p. 45, no. 596 (1902); Erlang. Journ. f. Orn. 1905, p. 435; Dubois, Gen. Av., Musophagidæ, pp. 3, 4, no. 8 (1907).

Syncipite et lateribus capitis supra oculos griseo-virescentibus; crista compressa albida vix virescente tincta, basi plumarum roseo induta, postice in parte ima rubra; genis, collo, dorso summo et pectore viridi-olivaceis, genis flavicantioribus; gula, ut videtur, viridi-grisescente; dorso alisque cæruleo-chalybeis; remigibus primariis rubro-puniceis, cæruleo-chalybeo marginatis; abdomine et subcaudalibus fusco-griseis; cauda viridi-chalybea, paullum cæruleo-nitente; rostro et verrucis palpebralibus rubris; pedibus fuscis.

Long. tot. 400 mm., al. 180, caud. 200, rostri culm. 24, tarsi 42.

The very peculiar colouring of the head of this species makes it very different from all the other known species. The crest, which is quite compressed, is greenish-grey in the anterior part, then slightly tinged with rose-colour, whitish towards the end, but in the lower hind part there is a tuft of bright red feathers.

The type of this very distinct species was collected by the unfortunate Prince Ruspoli during his exploration of the region round Lake Rudolf. Although we do not know the exact locality where the specimen was collected, it has been supposed that it was near Lake Bissan Abaia or Abai, discovered by Ruspoli to the north-east of Lake Stephanie.

The first notice of this bird was given by Dr. Matschie (*l. c.*), who saw it in the Museum of Genoa, and published a description, probably from memory, as it is quite incorrect.

It is very strange that the bird has not been met with again by later travellers, and this circumstance has induced me to have a figure of this rare Touracou published in order to make it better known.

The locality Somali-land, attributed to this species by Dubois and Sharpe, does not seem to me exact, Abaia or Abai Lake being much more in the interior and forming part of the Abyssinian empire. In this region it appears that Baron von Erlanger carefully searched for the bird, but without success.

The type specimen, preserved in the Museum of Genoa, is still unique, so that *Turacus ruspolii* is perhaps the rarest species of the genus.

II.—*A Third* Contribution to the Ornithology of Cyprus.*

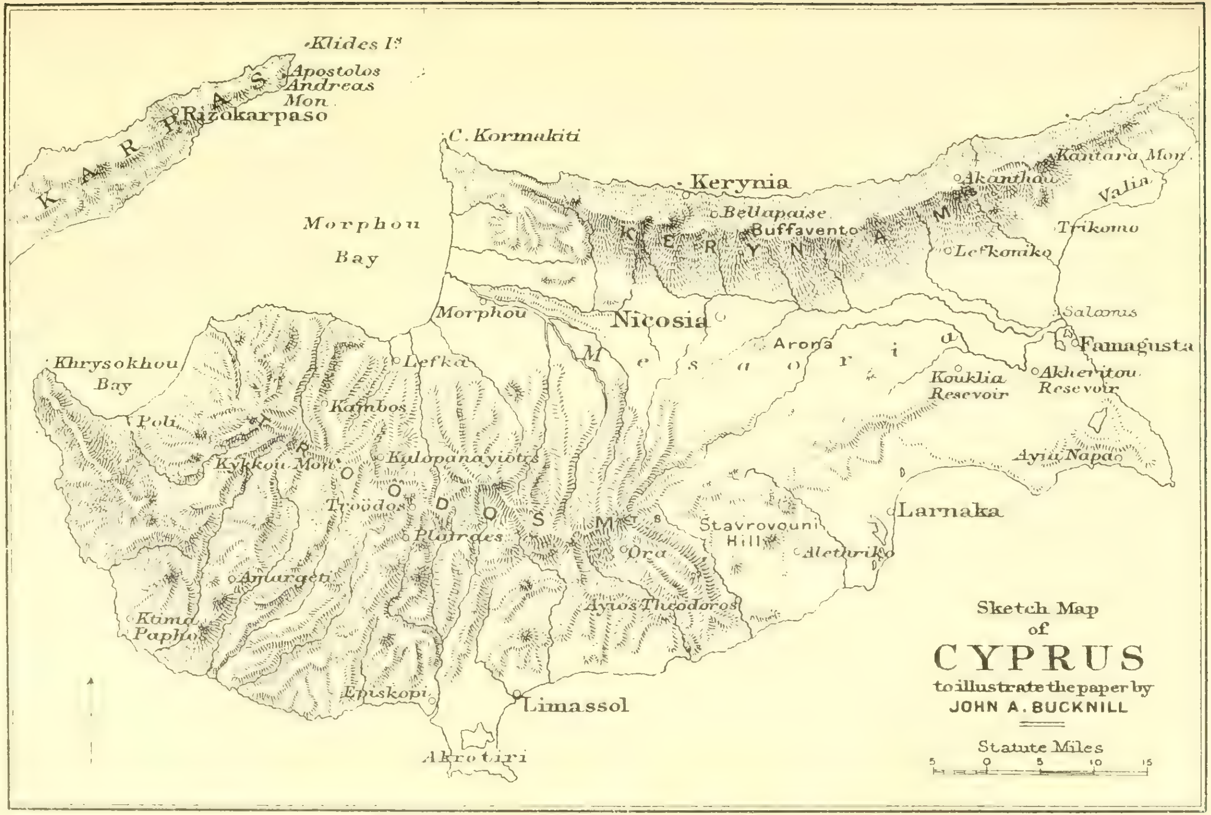
By John A. Bucknill, M.A., F.Z.S., M.B.O.U.

(Plate II.)

My official connection with the Island of Cyprus came to an end in July 1912, and I left this very charming and beautiful spot with very sincere regret. As a valedictory contribution to the literature of the local Avifauna I have

---

* First contribution: 'Ibis,' 1909, pp. 569–613; 'Ibis,' 1910, pp. 1–47, 385–435. Second contribution: 'Ibis,' 1911, pp. 632–656.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Bellapaise
Buffavento
KERYNIA MTS
Akanthou
Kantara Mon.
Valia
Trikomo
Lefkoniko
Morphou Bay
Morphou
Nicosia
Salamis
Famagusta
Mesaoria
Arona
Koukilia Resevoir
Akheritou Resevoir
Ayia Napa
Khrysokhou Bay
Poli
Lefka
Kambos
Kykkou Mon.
Kalopanayiotis
TROODOS MTS
Troödos
Platraes
Ora
Stavrovouni Hill
Alethriko
Larnaka
Amargeti
Ktima Paphos
Ayios Theodoros
Episkopi
Limassol
Akrotiri
Statute Miles
5
0
5
10
15

Sketch Map
of
CYPRUS
to illustrate the paper by
JOHN A. BUCKNILL

put together the notes that I had collected since my last paper on the subject, which appeared in this Journal in October 1911.

I was away from the island from November 11th, 1911, to February 8th, 1912, but was informed that from the end of December the rains were extraordinarily heavy, flooding thousands of acres in the Famagusta district and doing much damage to the sprouting barley. Winter visitors were not numerous, owing, no doubt, to the mildness of the weather.

Thrushes and Blackbirds, Lapwing and Golden Plover were conspicuously few, but the Stock-Dove (never before satisfactorily recorded) occurred in some numbers.

The spring migration was heavy, and we obtained some new species, including the Icterine Warbler and Whiskered Tern. Spoonbills and Gull-billed Terns were also, to us, new arrivals.

Mr. Baxendale paid a second visit to the Klides Islands in April 1912, arriving on the islands on the 19th; the migration was in full swing and the long narrow promontory between Rizokarpaso and the monastery of Apostolos Andreas (which is at the point of the cape) was packed with crowds of birds: Red-backed, Masked, and Lesser Grey Shrikes in hundreds, the first-named predominating in numbers; Blackcap, Palestine and other Warblers, Wheatears of several species, Ortolan and Black-headed Buntings, Short-toed Larks, Cuckoos of both species, and many other varieties too numerous to mention.

He found the Lesser Peregrine breeding, the young birds being more advanced than they were on May 11th, 1911, the date of his previous visit; the Mediterranean Herring-Gull had also nested, apparently much earlier than in the previous year, whilst the Shags had young in all stages.

On the journey Mr. Baxendale obtained the Little Egret, Norfolk Plover, and Hen-Harrier, found the Common Swift, Rock-Dove, and Red-rumped Swallow nesting: saw the Golden Oriole and collected some interesting Wheatears and Warblers.

The decrease of the hare and the indigenous Game Birds, which has been steadily taking place in Cyprus for a good many years, engaged my serious attention during my residence in the island. The causes are mainly the large increase in the number of guns carried by the peasantry and the good price obtainable for game in the markets. Although, under the old game laws, there existed reserved "areas" and "forests" in which no shooting was allowed nominally, there is no doubt that a great deal of illicit destruction of game took place in these localities.

After much consultation with the leading English, Greek, and Turkish sportsmen, I drafted a Bill which I introduced into the Legislative Council, and which with some modifications became Law on December 31st, 1911.

Under this Law *Game* includes Moufflon, Hares, Pheasants, Partridges, Francolin, Sand-Grouse, Quail, Bustards, Wild Swans, Wild Geese, Wild Duck of any kind, Woodcock, and Snipe.

Moufflon are prohibited from being hunted at all periods, except under special permission of His Excellency the High Commissioner.

Pheasants and Francolin are prohibited from being pursued at all until September 1st, 1916.

A close season for all Game is prescribed between the 15th of February and the 12th of August.

The taking of the eggs of Game Birds is entirely prohibited.

No Wild Birds of any kind may be taken between the 15th of February and the 12th of August, except Thrushes, Blackbirds, Starlings, Larks, Beccaficos, Bee-eaters, Doves, Pigeons, Jackdaws, Crows, Magpies, Ravens, Hawks, and Sparrows.

The following indigenous species are entirely protected at all seasons:—

Troglodytes cypriotis Bate.
Cinclus olympicus Madarász.
Saxicola morio cypriaca Hartert.
Parus cypriotes Dresser.

Certhia brachydactyla dorotheæ Hartert.
Loxia guillemardi Madarász.
Scops cyprius Madarász.

The eggs of all Wild Birds are protected entirely except those of Bee-eaters, Doves, Pigeons, Jackdaws, Crows, Magpies, Ravens, Hawks, and Sparrows.

Certain reservations of areas of land and forest are allowed to be made, within which no shooting is to be permitted.

These are the principal provisions of the Law, and I am glad to say that arrangements have been made this year by which the reserved areas will be patrolled and watched by properly appointed verderers in the pay of Government. A permit to obtain specimens for scientific purposes may be obtained from the High Commissioner.

The Law is not perfect, but it is an advance on any previous Law, and it is to be hoped will work well.

I should like to add a few words as to those subspecies of birds which have been described from time to time as indigenous to the island. I think there is not much fear of their extinction. I wish I could say the same of the Francolin. *Cinclus olympicus, Parus cypriotes, Loxia guillemardi, Certhia brachydactyla dorotheæ,* and *Garrulus glaszneri* are all safe enough in the great Troödos range: no one would waste a charge except on the first and the last, and there is so much rough country on these mountains that their survival is pretty sure.

Corone pallescens is a nuisance everywhere; *Galerita cristata cypriaca* is probably the commonest bird in the island; *Saxicola morio cypriaca* is also ubiquitous; *Scops cyprius* is abundant; *Parus aphrodite* (if it exists) grades into *Parus major,* which is extremely common. I think the local Chaffinch, Magpie, and perhaps the Raven will be the next birds which will be honoured with subspecific rank.

The Cyprus Natural History Society, through some of its members, has really done good work and has much stimulated local interest in all branches of Natural History:

notably Messrs. F. R. S. Baxendale, M.B.O.U.; W. J. Ansell, I.S.O.; G. Wilson; and T. Greenwood—in addition, of course, to Mr. Horsbrugh.

We have rescued many records from oblivion and made good some new and many doubtful ones.

Sibthorp recorded 81 species; Lilford 231; Madarász 219. During my five years' stay in the island we were able to bring the number up to nearly 300: having added the following, of which we obtained specimens of those marked with an asterisk:—

*_Turdus alpestris_ Ch. Brehm.
*_Saxicola hispanica xanthomelæna_ Hempr. & Ehr.
*_Cyanecula suecica_ Linn.
*_Hypolais icterina_ Vieill.
*_Sylvia hortensis crassirostris_ Hartert.
*_Phylloscopus sibilatrix erlangeri_ Hartert.
*_Phylloscopus bonellii orientalis_ Hartert.
*_Lusciniola melanopogon_ (Temm.).
*_Ligurinus chloris mühlei_ Parrot.
*_Linota cannabina mediterranea_ Tschusi.
*_Emberiza schœniclus canneti_ Hartert.
*_Sturnus vulgaris balcanicus_ Buturl. & Härms.
Gypaëtus barbatus (Linn.).
Chenalopex ægyptiacus Macg.
Anser fabalis (Lath.).
*_Anser albifrons_ (Scop.).
Branta bernicla (Linn.).
*_Cygnus musicus_ Bechst.
*_Æthyia rufina_ (Pall.).
*_Clangula glaucion_ (Linn.).
*_Erismatura leucocephala_ (Scop.).
Turtur senegalensis (Linn.).
*_Eudromias morinellus_ (Linn.).
*_Recurvirostra avocetta_ Linn.
*_Hydrochelidon hybrida_ (Pall.).
*_Podicipes cristatus_ Linn.
*_Podicipes nigricollis_ E. L. Brehm.

Amongst species which had hitherto been included in the list on unreliable or slender evidence we were able to make good the following:—

*_Turdus iliacus_ Linn.
*_Cettia cettii_ (Marm.).
Pycnonotus xanthopygus (Hempr. & Ehr.).
*_Muscicapa collaris_ Bechst.
*_Coccothraustes vulgaris_ Pall.
*_Buteo vulgaris_ Leach.
*_Astur palumbarius_ (Linn.).
*_Pernis apivorus_ (Linn.).
*_Falco punicus_ Levaill.
*_Columba œnas_ Linn.
*_Otis tarda_ Linn.
*_Squatarola helvetica_ (Linn.).
*_Ægialitis geoffroyi_ (Wagl.).
*_Totanus stagnatilis_ Bechst.
*_Totanus fuscus_ (Linn.).
*_Sterna anglica_ Mont.

We have also, for the first time, found breeding in the Island, or obtained eggs of, many species, such as :—

Cinclus olympicus Madarász. [Young.]
*_Daulias luscinia_ Linn.
*_Sylvia cinerea_ Lath.
Sylvia atricapilla (Linn.). [Young.]
Cettia cettii (Marm.). [Young.]
*_Cisticola cursitans_ (Franklin).
*_Parus cypriotes_ Dresser.
*_Certhia brachydactyla dorotheæ_ Hartert.
*_Troglodytes cypriotis_ Bate.
*_Anthus pratensis_ (Linn.).
*_Anthus campestris_ (Linn.) ?
*_Muscicapa grisola_ Linn.
*_Fringilla cœlebs_ (Linn.).
*_Emberiza cæsia_ Cretzsch.
*_Melanocorypha calandra_ (Linn.).
*_Calandrella brachydactyla_ (Leisl.).
Alauda arborea Linn. [Young.]
*_Garrulus glaszneri_ Madarász.
Caprimulgus europæus Linn. [Young.]
Upupa epops Linn. [Young.]
*_Aluco flammeus_ (Linn.).
*_Hieraëtus fasciatus_ (Vieill.).
*_Falco punicus_ Levaill.
Phalacrocorax graculus (Linn.). [Young.]
*_Spatula clypeata_ (Linn.).
*_Querquedula circia_ (Linn.).
*_Æthyia fuligula_ (Linn.).
Æthyia nyroca (Güld.). [Young.]
*_Columba palumbus_ Linn.
*_Turtur communis_ Selby.
Pterocles arenarius (Pall.). [Young.]
*_Gallinula chloropus_ (Linn.).
*_Œdicnemus scolopax_ (S. G. Gmel.).
*_Ægialitis cantiana_ (Lath.).
*_Ægialitis curonica_ (Gmel.).
*_Himantopus candidus_ Bonnat.
*_Larus cachinnans_ Pall.
*_Sterna minuta_ Linn.
*_Podicipes cristatus_ (Linn.).
*_Podicipes fluviatilis_ (Tunstall).

Of those marked with an asterisk we obtained the eggs.

25*. MONTICOLA SAXATILIS (Linn.).

The Rock-Thrush is evidently a regular migrant, as we have now obtained quite a number of specimens on both spring and autumn migrations. Indeed, from about August 27th to September 24th, 1911, it might be said to have been fairly common on Troödos, and a local sportsman shot six in one morning!

106. DAULIAS LUSCINIA Linn.

I had expected that the Nightingale would soon be proved to nest in the Cyprus mountains. I discovered eggs of this bird (in a small collection made by Mr. Glaszner) taken at

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* The numbers prefixed to the names are those of Dresser's 'Manual of Palæarctic Birds.'

Platres (about 3500 ft.) on June 13th, 1906, and in mid-June 1911 Mr. Ansell obtained a nest with five eggs in the hills near Ora (about 2300 ft.), both places being on the southern range.

107. Daulias philomela (Bechst.).

We obtained the Thrush-Nightingale in the spring of 1911, and specimens were kindly identified by Mr. M. J. Nicoll.

156. Hypolais icterina (Vieill.).

I am glad to be able to add the Icterine Warbler to the Cyprus list. Mr. Baxendale obtained a single specimen near Famagusta in the spring of 1911. The bird was identified by Mr. M. J. Nicoll.

567. Sturnus vulgaris Linn.

568. Sturnus purpurascens Gould.
Sturnus porphyronotus Sharpe.

569. Sturnus poltaratskyi Finsch.
Sturnus nobilior Hume.
Sturnus vulgaris balcanicus Buturlin & Härms.
Sturnus vulgaris græcus Tschusi & Reiser.

The Starlings which in some winters occur in enormous numbers in Cyprus have always been rather a puzzle. At different times those authorities who have examined Cypriote specimens have described them, or some of them, as belonging to the first five forms denominated above.

However, I sent a number of skins to Dr. Hartert in the summer of 1911, and he, after examining them with those which he had previously received from Glaszner, has come to the conclusion that the Cyprus birds are all referable to two forms, *Sturnus purpurascens* Gould and *Sturnus vulgaris balcanicus* Buturlin & Härms (Orn. Monatsb. 1909, p. 56).

He also considers that it is possible that *S. v. balcanicus* and a form *Sturnus vulgaris græcus* Tschusi & Reiser (Orn. Jahrb. 1905, p. 141) will be found to be identical.

I should add that amongst the specimens forwarded by me to Dr. Hartert were examples which had already been labelled by other ornithologists as belonging to some of the other forms mentioned above.

618. Caprimulgus europæus Linn.

I had thought it probable that the Nightjar nested in the island, and in 1911 there was no doubt that it did so on the Troödos Mountains. The birds were about the whole summer, and judging from their "churring" in the evening there were several pairs within a radius of a few miles of the Government Offices. We did not find the nest, but in late August met with a female and two young birds just able to fly.

Mr. Baxendale saw a specimen at Famagusta as late as November 24th, 1911.

669. Upupa epops Linn.

I found the Hoopoe nesting in June in the plains; this was in a crack in the rocks at the side of the main road between Nicosia and Larnaka. It had of course been known to breed regularly in the mountains.

721. Buteo vulgaris Leach.

The Common Buzzard seems to occur not very rarely in winter. Mr. Baxendale obtained two females—one on the 27th of January, 1912, at Famagusta, and the other on the 29th of January, 1912, at Salamis.

739. Haliaëtus albicilla (Linn.).

I have here to correct an error. The specimen recorded in 'The Ibis' for October, 1911, at p. 646, was taken to England by Mr. Baxendale, and on examination by Mr. Ogilvie-Grant turned out only to be a fine specimen of *Aquila heliaca* Savigny, the Imperial Eagle.

762. Falco cherrug J. E. Gray.

Mr. Baxendale obtained a female Saker in the winter of 1911–12. Although recorded before on one or two occasions from the island, it is the first time any of us had obtained a proper specimen. It was kindly identified by Mr. W. L. Sclater.

764. Falco peregrinus Tunstall.

Mr. Baxendale shot a fine male Peregrine near Famagusta. It was identified by Mr. Nicoll. In September of 1911 I found, at Paphos, Peregrines frequenting the old Turkish round-house which stands some way out at sea separated by a long-ruined wave-washed wall from the Fort (now used as a store): I have no doubt that this remote and isolated spot is also a breeding-place of this species.

765. Falco punicus Levaill.

Mr. Baxendale, on the 9th of January, 1912, shot, near Famagusta, a fine specimen of the Lesser Peregrine which was identified by Mr. Nicoll.

At the Klides Islands on April 19th, 1912, Mr. Baxendale discovered the nest with four nestlings, the largest of which was already shewing some signs of plumage and which were considerably bigger than the two nestlings found on the same island on May 11th, 1911. The eyrie was in a roomy fissure in a low cliff, not in the same spot as the previous year. Remains of Quail and a Mediterranean Herring-Gull (which were nesting in numbers on the island) were noticed in the vicinity of the nest.

768. Falco æsalon Tunstall.

Mr. Baxendale obtained a female Merlin on March 17th, 1912, at Famagusta; Mr. Wilson another in January: and others were seen.

769. Falco subbuteo Linn.

Mr. Baxendale obtained the Hobby near Famagusta in the spring of 1912, and saw others.

776. Phalacrocorax carbo (Linn.).

We find the Cormorant to be a regular winter visitor, though not common. We have obtained more than one specimen.

781. Phalacrocorax graculus (Linn.).

Mr. Baxendale on the 19th of April, 1912, found the Shag breeding in small numbers on the Klides Islands, with young birds fully fledged. Mr. Baxendale noticed that the young birds were extremely pale underneath [the form, presumably, described as *Phalacrocorax desmaresti* (Payraudeau), the Mediterranean Shag]. The species must breed very early in Cyprus.

794. Ardea garzetta Linn.

Mr. Baxendale obtained the Little Egret on April 13th, 1912, at the Freshwater Lake, Famagusta. He also obtained another on the 15th at Salamis.

803. Ardetta minuta (Linn.).

We obtained a very pretty female albinistic specimen of the Little Bittern in the spring of 1912.

812. Platalea leucorodia Linn.

Half a dozen Spoonbills appeared at the Freshwater Lake in May, but Mr. Baxendale was unable to obtain a specimen, though he saw them more than once.

Chenalopex ægyptiacus (Linn.).

The Egyptian Goose occurred at the Freshwater Lake in January 1912. About a dozen were frequently noticed, but we did not succeed in obtaining a specimen. Seven also appeared on the water at Arona, near Nicosia, on January 21st: rather later than usual.

824. Anser albifrons (Scop.).

The White-fronted Goose came over in fair numbers in December 1911. Mr. Giles, the Irrigation Superintendent, bagged two, and a native gunner shot seven in one night at Acheritou reservoir.

858. Æthyia marila (Linn.).

The Scaup Duck has to be included in the Cyprus list. The Rev. F. C. R. Jourdain has kindly drawn attention to the fact that Lichtenstein, in his 'Verzeichniss der Doubletten des Zoolog. Museums der Königl. Universität zu Berlin' (1823), p. 85, mentions examples of the Scaup from Cyprus [Brit. Mus. Cat. Birds, xxvii. p. 355]. It would only be a winter visitor.

867 ? Œdemia fusca (Linn.) ?

Scoters again turned up this year (1912), Mr. Baxendale seeing some on Kouklia Reservoir early in April. He did not succeed in shooting one, so we are still in doubt as to which species does occur with us.

887. COLUMBA ŒNAS Linn.

The Stock-Dove has hitherto been included in the Cyprus list with very great doubt. In December 1911 quite a number appeared in different parts of the island, and we obtained several specimens.

911. PHASIANUS COLCHICUS Linn.

Our experiment in turning down Pheasants has not yet come to an end, so it is not possible to say what will be the result. Mr. T. Greenwood has borne the whole burden of the by no means inconsiderable expense of rearing and keeping the aviary birds. The parent birds were brought out in the spring of 1910. In February 1911 we turned out some of their progeny in the Stavro Valley high up in the Southern range: one cock was killed by a dog, and three birds were seen together in the autumn, but of this lot we have heard nothing further.

Mr. Greenwood turned out another lot near Agios Theodoros in the Larnaka District in one of the Game reserves in December of 1911. It was said by the villagers that some of these were so tame that they came and fed with their fowls: also that two hens were supposed to be nesting in the bush.

Mr. Greenwood, in February 1912, turned out a third lot in another reserve near the sea not far from Paphos, and some of these birds were seen in the foothills, having evidently followed the stream up. I have no further information of them.

952. FRANCOLINUS VULGARIS Steph.

This is rather a good opportunity for taking a survey of the Francolin in the island, as, after having been entirely protected by law for a period of five years, the prohibition automatically ceased from August 12th, 1911, till the end of the year, when another five years' protection came on under the new Game Bill.

I obtained full reports from all parts of the island as to the number seen and shot.

In the Paphos District I reckon about 100 brace were killed, mostly in the low-lying flats between the Kha Potami (river) and Ktima: this is now made a reserve and guarded.

In the Karpas there were a few still to be found and a dozen or so were obtained.

But in the Vallia scrub, at Limassol, and Morphou marshes, and in the Nahiehs of Chrysochou and Poli, where twenty years ago the bird was common, there are none now. Indeed, the Paphos area mentioned above is the only place where the species has held its own, and this is due to the high hemp, thick cotton, and rough reeds and tangle with which much of this locality is covered.

In September 1912 I saw about twenty birds in this area when shooting: they are almost impossible to flush without a good dog and creep about unseen, even on lands where there is little cover. If they rise they make for the hemp, through which a dog can hardly penetrate.

There are a few left on the Kormakiti Cape in the north of the island, but the bird is evidently on the downward grade. It is to be hoped that the arrangements under the new Game Law will keep it from complete extinction.

1047. Himantopus candidus Bonnat.

In June of 1911 Mr. Ansell obtained a nest of four eggs at the Larnaka Lakes, and at the end of May 1912 Mr. Baxendale obtained eggs at the Freshwater Lake, Famagusta: so there is now no doubt that, given favourable conditions of water, the Black-winged Stilt nests in small numbers regularly in the island. This I had always thought to be the case.

1112. Hydrochelidon hybrida (Pall.).

The Whiskered Tern is another addition to the Cyprus list. Mr. Baxendale obtained a number of specimens at the Freshwater Lake in May 1911. They were consorting with the Common and Black Terns. The Whiskered Tern may well be a more or less regular visitor to the island on migration.

1121. Sterna anglica Mont.

The Gull-billed Tern had only been recorded by Schrader in 1876-8 during his stay in the island. We obtained this bird for the first time this year (1912), Mr. Baxendale shooting a specimen on May 24th at Kouklia reservoir. It is probably a tolerably regular migrant, but apt to be overlooked.

1147. Larus fuscus Linn.

Mr. Baxendale saw some parties of the Lesser Black-backed Gull on his visit to the Klides Islands in mid-April 1912, but did not find them breeding, although he took fresh eggs of *Larus cachinnans* Pall.

1168. Puffinus yelkouanus (Acerbi).

When leaving the island from Famagusta, the steamer being a few miles from the southern coast, I observed several Shearwaters close to the vessel and watched them with glasses for quite a long time. I have no doubt that they were the Eastern Manx Shearwater.

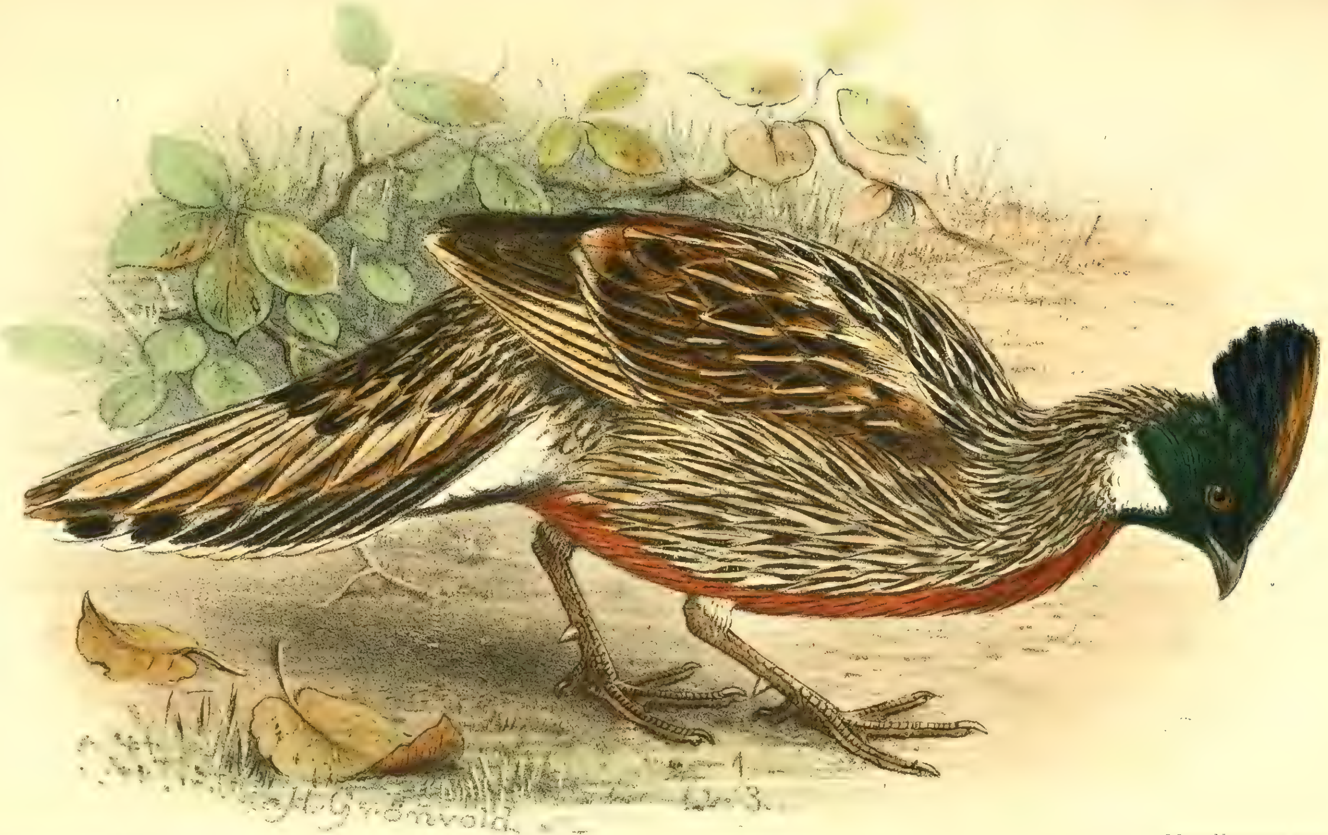
III.—*Note on a new Species of Pucras Pheasant found in the Province of Anhwei or Ngan-Hwei, China.* By the Rev. F. Courtois, S.J., Director of the Siccawei Museum near Shanghai.

(Plate III.)

This species, which was briefly described in the 'Bulletin' of the B. O. C. for October last as *Pucrasia joretiana*, is intermediate in some respects between *P. darwini* and *P. xanthospila*. From the first-named it presents the following differences :—

1. The feathers of the back of the shoulders and of the sides of the breast have two wide triangular black streaks converging to the tip, instead of four.

Ibis. 1913. Pl. III.



H. Grönvold del.

West, Newman imp.

PUCRASIA JORETIANA.

2. The centres of the feathers on the sides of the body, as well as those of the wings and of the back, instead of being yellowish or buffy, are greyish white.

3. The occipital crest is more tufted and very short, not above 2 inches in length; it is formed of broad and rounded feathers, not narrow, long, and pointed ones.

4. The under tail-coverts and central tail-feathers have no broad margin of chestnut, but are only black and white.

5. The median patch of chestnut on the neck and chest is darker and richer.

From *P. xanthospila* it differs in the absence of the characteristic golden patch on the neck and shoulders, as well as in the shape of the crest.

The following are the dimensions of the type, a presumed male, now in the Natural History Museum:—Length 22·8 inches, wing 8·9, tail 7·9, tarsus 2·75, middle toe and claw 2·70.

The distinct nature of this Pucras Pheasant was first noticed by the Rev. P. Heude, S.J., by whom it was provisionally named, being dedicated to one of his missionary colleagues, the Rev. H. Joret, S.J., who procured the first specimens.

The species is found in the mountainous region round Hwo-shan or Hoschan, in the western part of the Province of Anhwei or Ngan-Hwei, at an altitude of from 2000 to 5000 feet. Its range, therefore, is intermediate between those of *P. xanthospila* in the northern province of Pechihli and *P. darwini* in the southern provinces.

The following is a list of the described species of Chinese Pucras Pheasants:—

Pucrasia xanthospila G. R. Gray, P. Z. S. 1864, p. 259, pl. xx. Type from the mountains N.W. of Pekin (Hon. Sir F. W. A. Bruce), now in the Natural History Museum.

Distribution: Pechihli Province, N.W. China.

Pucrasia xanthospila ruficollis David & Oustalet, Ois. Chine, p. 408 (1877). Type from Shensi Province, now in the Paris Museum.

Distribution: Shensi and perhaps Kansu Provinces, N.E. China.

Pucrasia meyeri Madarász, Ibis, 1886, p. 145. Type from Central Thibet, now in the Hungarian National Museum.

Distribution: Yunnan and Thibet.

Pucrasia joretiana Courtois, Bull. B. O. C. xxxi. 1912, p. 7. Type from Hwo-shan, Anhwei Province, Middle China, now in the British Museum.

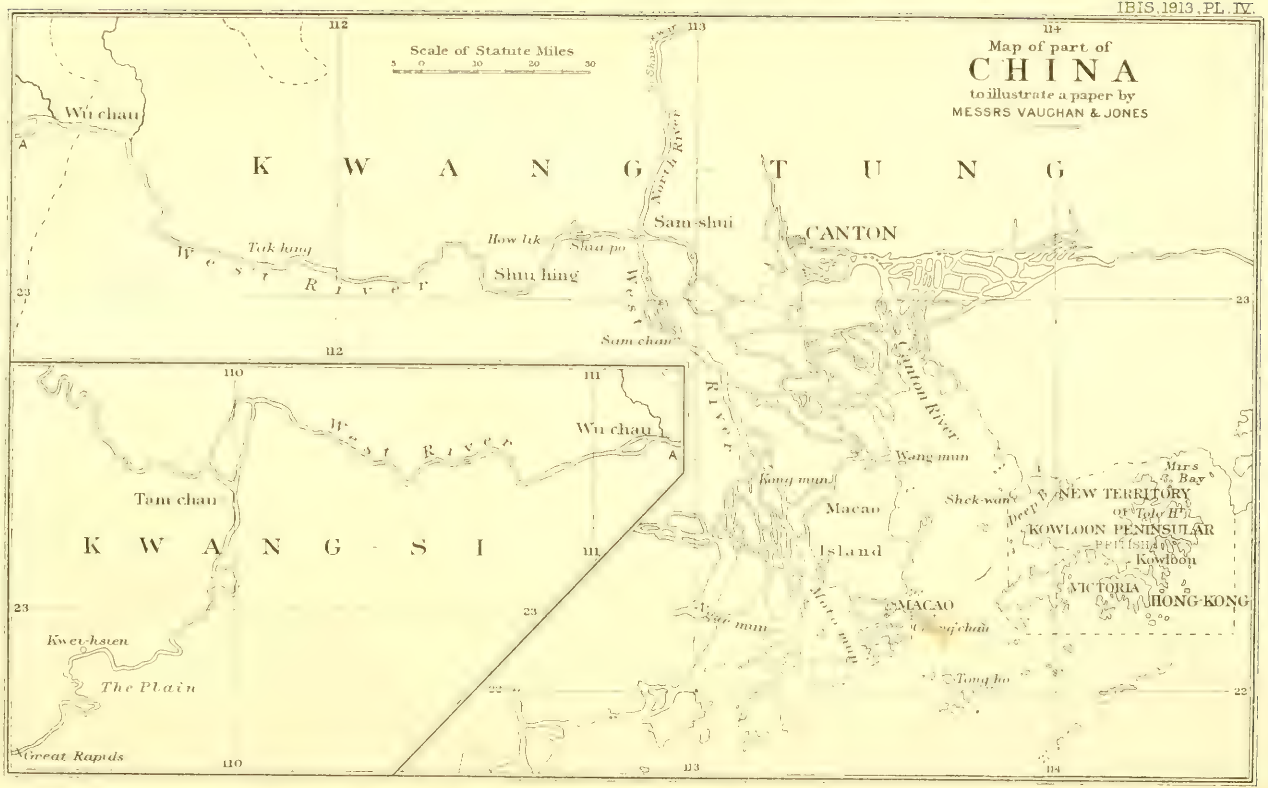
Pucrasia darwini Swinhoe, P. Z. S. 1872, p. 552. Type from the mountains of Che-kiang Province, S. China, now in the British Museum.

Distribution; Che-kiang and Fokien Provinces, Southern China.

Pucrasia styani Ogilvie-Grant, Bull. B. O. C. xxiii. p. 32 (1908). Type from Ichang, Hupeh Province, Central China, now in the British Museum.

The males of these six forms can be distinguished by the following key:—

- *a*. Outer tail-feathers rufous at the base, no grey .. *P. meyeri.*
- *b*. Outer tail-feathers grey at the base, no rufous.
  - a'. A patch of chestnut on the chest and breast.
    - a^2. A distinct yellow nuchal collar.
      - a^3. Base of the throat glossed with green, like the chin .... *P. xanthospila.*
      - b^3. Base of the throat glossed with reddish, contrasting with the green of the chin . *P. x. ruficollis.*
    - b^3. No yellow nuchal collar.
      - c^3. No chestnut on the under tail-coverts; crest short and tufted................. *P. joretiana.*
      - d^3. Under tail-coverts with chestnut; crest long and narrow .... *P. darwini.*
  - b'. No chestnut patch on the chest .... *P. styani.*



Map of part of
CHINA
to illustrate a paper by
MESSRS VAUGHAN & JONES

Scale of Statute Miles
5 0 10 20 30
KWANGTUNG
KWANGSI
Wu chau
A
Tak hing
West River
How lik
Shui po
Shiu hing
Sam-shui
North River
Shau
West
Sam chau
River
CANTON
Canton River
Wang mun
Kong mun
Macao
Island
Moto mun
MACAO
Sak mun
Tong ho
Shek-wan
Deep B
NEW TERRITORY
Mirs Bay
of Tolo H
KOWLOON PENINSULAR
BRITISH
Kowloon
VICTORIA
HONG-KONG
Tam chau
Kwei-hsien
The Plain
Great Rapids
110
111
112
113
114
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IV.—*The Birds of Hong Kong, Macao, and the West River or Si Kiang in South-East China, with special reference to their Nidification and Seasonal Movements.* By Lieutenant R. E. Vaughan, R.N., M.B.O.U., and Staff-Surgeon K. H. Jones, M.B., R.N., F.Z.S., M.B.O.U.

(Plate IV.)

In no part of China have Europeans been permanently settled so long, and with no part so continually in touch, as with the littoral of the great south-eastern Province of Kwang Tung. It follows that a considerable number of naturalists have at various times visited Hong Kong, Macao, and the great southern metropolis Canton, together with their environs; and several ornithologists have added their quota to our information of the avifauna of the district.

The great naturalist Swinhoe* was at Hong Kong, and visited Canton and Macao, from February to May 1860, and contributed his results to 'The Ibis' in a charming and characteristic article, which, considering the time at his disposal, manifests that he displayed his usual energy in the pursuit of his favourite study.

Another naturalist, Mr. J. C. Kershaw †, who, although to some considerable extent an ornithologist, would perhaps consider himself to be an entomologist, has contributed a list of the birds of the Kwang Tung coast to this periodical. This list was regrettably curtailed by want of space, but is perhaps the most complete at present published.

The writers of the following notes have enjoyed exceptional facilities for observing the birds of this part of China over a considerable number of years, and of these they fully availed themselves. Ample leisure in the open air is essential to an understanding of the habits of the birds of any country, and this they have had.

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* "Notes on the Ornithology of Hongkong, Macao, and Canton, made during the latter end of February, March, April and the beginning of May, 1860." 'Ibis,' 1861, pp. 23–57.

† "List of the Birds of the Quangtung Coast, China." 'Ibis,' 1904, pp. 235–248.

The part of China dealt with in this article is contained in the provinces of Kwang Tung and Kwang Si, and lies just to the south of the northern Tropic line (see Plate IV.). The island of Hong Kong, a Crown Colony annexed in 1841, is bare, mountainous, and rocky in the higher portions of its surface, but, thanks to the foresight and protection of the British Government, remarkably well wooded, for the most part with fir-trees, on all its lower slopes.

The hills of the island do not rise to a greater height than about 1800 feet, and above the limit of the trees are generally covered with short wiry grass. The formation is chiefly granite, and in many of the ravines and valley-bottoms, and along the sea-shore in most places, there are blocks and boulders of this rock, often of titanic size and fantastic shape, which have been left where they lie by the gradual erosion of the softer parts of the original matrix. These great rocks are often piled together as if by some sudden cataclysm, and present absolutely inaccessible breeding-places for *Myiophoneus cæruleus* and doubtless for other birds and small mammals.

On the northern side of Hong Kong is the city of Victoria, and a little to the east of it is the well-known Happy Valley, or Wan hai Cheong.

Opposite to Hong Kong is the Kowloon Peninsula, part of the so-called New Territory which was taken over by the British Government in 1899; it has an area considerably greater than 300 square miles, and forms a part of the mainland of China. The country about Kowloon resembles that of Hong Kong, except that, like most parts of the Chinese mainland in these latitudes, it is very poorly wooded. The trees are chiefly small firs, and from these the Chinese cut off the lower branches long before they have attained any size.

In the vicinity of temples and behind most of the villages are thick clumps of trees, chiefly False Banyans and various species of *Ficus*. Many of these trees are covered with strips of the common red lucky paper, though why, no one seems quite to know; possibly it is in connection with some pre-Chinese superstition, adopted from the aboriginal inhabitants of the country. The hills on the mainland near Hong Kong run up to more than 3000 feet, but otherwise closely resemble those on the island.

The New Territory contains some very fine land-locked bays, of which Tolo Harbour, the largest, need only be mentioned.

The chief crop grown here, as elsewhere in Southern China, is rice, known to Europeans in the growing state as paddy. Except in certain flat portions of the country, to be mentioned presently, paddy is grown in areas of small size, terraced to suit the slope of the ground; each one of these is surrounded by a little clay or earthen rampart, which separates it from its neighbour, and contains water essential to the growth of the rice-plant.

These crops afford ample protection to many wading birds in the spring and autumn, and in the summer to certain of the Rails, but they are especially famous at the right season as the haunt of the migrating Snipe. Inland the Snipe specially favour the mulberry-canes in the spring and the paddy in the autumn.

In some parts of the New Territory a good many sweet-potatoes are grown and in some localities sugar-cane is not uncommon. Although all possible sites are cultivated with tireless industry, there remains, from the nature of the ground, a very large portion covered with grass, rocks, and scrub.

Virgin forest exists in a few favoured spots on Hong Kong Island and on the mainland, and is very dense where it does occur.

About forty miles to the west of Hong Kong lies Macao, the oldest European settlement in China, which has been in the possession of the Portuguese since 1539. Here they are permitted to remain on suffrance by the Chinese.

Macao is situated on the seaward end of a peninsula which juts out into the bay of the same name in the form of a rocky ridge.

On one side of Macao the country is quite flat and covered with paddy-fields, but on the other is a range of hills, barren and rocky, like those of the New Territory across the water.

To the eastward of Macao is Moto Mun, one of the entrances to the Si Kiang or West River, and Moto and Kong Mun are two places on it, about thirty and sixty miles inland respectively, of which mention is made in this paper.

To the north-north-east of Macao is Wang Mun, another mouth of the West River.

Inland from Macao, towards Canton on the one hand and Samshui on the other, lies the Delta country. Except for an occasional small mound, in many cases artificial, and in others once a rocky islet in the estuary, this tract is entirely flat, and has been formed by the alluvium brought down by the Canton and West Rivers.

Throughout the Delta country a vast quantity of rice is cultivated in immense paddy-fields, whilst mulberry-canes, laichee and banana plantations clothe the banks of the creeks and rivers. This portion of the country is very densely populated with the most objectionable ruffians in China.

Above Samshui, which is a hundred and ten miles from the sea, is the Shiu Hing gorge, and from this point westward throughout Kwang Tung and into Kwang Si the physical conformation of the country is completely changed. The land is hilly and the river-banks are often very steep, bamboo and scrub abound, and the population is comparatively scanty. The valleys are often filled with extremely dense scrub, but large trees, except those unmolested for semi-religious reasons and those immediately about buildings, are scarce.

The finest trees in this part are a species of *Bombax*, which grows to a great height in favoured places, while pines (*Pinus sinensis*) also occur of considerable size, and are much patronized by various species of birds for nesting purposes.

Ornithologically the most interesting place on the West River is Howlik, some twenty miles above Samshui. At this place there is an enormous Buddhist monastery, situated halfway up a hill some 2000 feet high and surrounded by about four square miles of virgin forest, which is rigorously protected by the monks and forms a veritable haven of refuge for many species of birds.

Through the forest runs a little river, which attracts certain birds to its banks, and constant observation led to the conclusion that some five-and-twenty species are to be found here and nowhere else in the districts under consideration.

Originally, no doubt, the whole of this part of southern China was clothed with dense forest, but no plant capable of serving for fuel has any chance of survival with the Chinese, and it is only by a well-organized system of armed forest-guards that the monks at Howlik preserve their trees intact. Above Howlik the type of country does not change until Kwei Hsien in Kwang Si is reached, or for well over 250 miles.

Wuchau, about 110 miles above Samshui, is the most westerly point which has been under observation in the winter months, for during that time of year, owing to the fall in the river, gunboats are unable to proceed further inland.

At Kwei Hsien there is, for this part of China, a considerable plain, covered largely with grass and showing curious outcrops of carboniferous rock. Several species of birds adapted to such a habitat occur here and not elsewhere.

There is one other district which it is necessary to mention, and that is the North River, a tributary of the West River which draws its waters from the southern parts of the Provinces of Kiangsi and Hunan. Here the scenery differs from that of the Si Kiang or West River chiefly in the presence along its banks of numerous cliffs, on which, in places, *Milvus melanotis* and *Corvus torquatus* breed in suitable small outstanding bushes or on ledges of the rocks. This river was explored as far as Shau Kwan, about 150 miles from its junction with the West River.

The climate of this part of eastern Asia is, on the whole, hot and damp for seven months in the year, and dry and moderately cool for the other five.

The spring and early summer are, as a rule, very wet, and a rainy winter is by no means unknown. Really cold weather, when it does occur, is usually experienced in January and February, but does not last long.

It is, perhaps, rather colder and hotter inland than it is on the coast, but the difference is not very marked. Typhoons or hurricanes may occur during any month of the year, except, perhaps, in February, but are most frequent during the summer. These storms are extremely violent, cause tremendous destruction of life and property, and often have a marked effect on the migration of birds, and especially on that which occurs along the sea-coast.

The Chinese of the districts considered are astonishingly ignorant of the native wild birds, in which they contrast strikingly with their fellow-countrymen of the northern provinces. The only exceptions are the few native wild-fowlers to be met with on the river. For the most part, however, the Chinese prefer to trap those birds which are required for food.

Of cage-birds the Chinese are extraordinarily fond, and some species are brought from great distances inland down the river by junk, and others from distant parts of the coast in steamers, so that it is never at all safe to infer because a bird is seen in a fancier's shop at Hong Kong, Canton, or elsewhere that it was taken in the vicinity. Swinhoe apparently sometimes fell into this error. Local birds are probably, as a rule, captured as nestlings, especially *Copsychus saularis* and *Trochalopterum canorum*.

It is convenient in writing of the birds of this part of China to describe them as summer or winter visitors, or as spring or autumn migrants. It is not pretended that these various distinctions can be rigidly upheld, for some birds are partly resident and partly migratory, whilst of others, which are chiefly birds of passage, a few may remain for the winter or summer as the case may be.

By a resident species is meant one which spends the whole year in the district.

The majority of the birds observed are migrants from the

Palæarctic region on their spring and autumn passages, and a very large number of these come also under the head of winter visitors, as would naturally be expected in a district only just inside the Tropic.

Of resident birds there are a considerable number, and many of these, as, for instance, the White-eared Bulbuls, are also partly migratory.

Summer visitors are fewer than those in the other groups, but this, again, is to be expected of a region just within the Tropic.

The general character of the resident portion of the avifauna and of the summer visitors is of the same type as that of north-eastern India, Burma, and the Himalayas.

The birds of this region, as might be expected, shew a great affinity to, and in many cases are identical with, those of Fokien Province of the lower Yangtze, which have been so thoroughly and excellently worked out by Messrs. Rickett, Styan, and La Touche.

There is no doubt that with further and more exact observations by trained ornithologists the range of many species will be found to be much more extended than it is at present considered to be.

In this connection it may be said that collections of skins, made often by natives, although of very great value, and, indeed, indispensable in the present state of our knowledge, may undoubtedly give rise to false impressions as to the relative frequency of a species in a given area, or as to the nature of their occurrence there. The writers have on several occasions, in the earlier stages of their observations, been misled as to the frequency of certain species by exceptional migratory movements and rushes.

Matters which have become abundantly evident with prolonged observation are the extraordinary localization and the regular but minute movements of certain resident species in restricted areas—for instance, those of the Chinese Blackbird (*Merula mandarina*) at Macao.

In this part of China no new species were discovered, a matter not entirely for regret and scarcely to be wondered at; but that there is variation among the resident birds in an area extending some 500 miles from east to west, is probable.

There still remains a great deal to be done in China in the way of field-work, and it must be many years before the life-story of a large number of the birds of that vast region is even approximately well known.

It is, for instance, very interesting to note the fact that several species of birds which are easily and abundantly observed on their spring migration were never seen on their autumn passage, and that in rarer instances the converse obtained.

Whether these species travel by different routes on the two passages, or whether all pass at night, without stopping to rest in the area under consideration, was not decided; there were, however, some slight grounds for the acceptance of the second suggestion.

In any case, it is extremely unlikely, considering the keen look-out which was kept on migratory movements, and the large amount of time spent in the field, that these birds simply escaped observation.

Field-notes made by two Naval Medical Officers, Staff-Surgeons J. P. H. Greenhalgh and C. E. Cortis Stanford, are embodied in this paper; the latter is a Member of our Union, and his collection of Chinese bird-skins is in the British Museum, Natural History; he has rendered much valuable assistance to the writers in the field.

In conclusion, it only remains for the writers to express their very great indebtedness to Mr. W. R. Ogilvie-Grant and the members of the staff of the Natural History Museum, who rendered them every possible assistance in the task of naming and arranging the specimens collected in China.

The nomenclature, unless otherwise stated, followed in this article is that of the 'British Museum Catalogue of Birds,' and the skins collected are deposited in the Natural History Museum.

TRYPANOCORAX PASTINATOR.

The Eastern Rook occurs in the winter months near Wuchau, usually in association with *Corvus torquatus.* It is always in small flocks. Seven of these birds were seen below Wuchau on July 27th, and had either come south or were not breeding-birds. From April 22nd until May 2nd a small flock was at Wuchau. This species has been also seen at Howlik.

CORVUS TORQUATUS.

The Collared Crow is a common bird throughout the districts treated of in this article, but, curiously enough, is never found far away from water, either salt or fresh.

The food of this species consists of various forms of carrion, and includes defunct female babies (which are not very uncommon in China), fish, and the more easily obtainable forms of marine mollusca.

Like other Crows, the sexes pair for life and may be seen going about together in the autumn and winter.

During the winter months this bird, like the Rook, selects certain favoured roosting-places, and to these, at the close of the day, large numbers may be seen winging their way from the feeding-grounds.

The nest, which is small for the size of the bird, is composed externally of sticks or mulberry-canes, on which is laid a layer of mud or clay, and on that again a good thick felt of rags, fur, buffalo-hair, pandanus fibre, pine-needles, and so forth, forming a deep and warm cavity for the reception of the eggs.

The nest is preferably placed in an evergreen tree for its better protection, the Collared Crow being a very early builder, but it has been found in a bamboo amongst those of a colony of Night-Herons, and also in a fir-tree. Up the North River this bird has become a cliff-builder, nesting on ledges of rocks which overhang the stream. When placed in a tree near a Kite's nest, the possessors of the latter persecute the Crows unmercifully, as if they suspected them of egg-stealing.

Young birds have been found very early in February, so that at times this Crow lays at the end of December, but the majority of clutches are produced late in February or in March. It is possible that this species is sometimes double-brooded, and it is certain that it possesses a very strong affection for certain nesting-sites.

The eggs[*] vary in length from 1·95 to 1·50, and in breadth from 1·27 to 1·03, and average 1·66 × 1·15.

PICA PICA.

Magpies are exceedingly common, both on the coast and up the rivers. They are less shy than at home, but do not return to a plundered nest very readily. They nest usually in a tall tree, but their great dome of sticks has been seen on the top of literary posts (which are erected in honour of scholars), once on the top of a pagoda, and three times in bamboos. One nest was seen which was only seven feet from the ground; this is most unusual in China.

The nest has the same sort of dome as in Europe, but, as thorns are less abundant, the usual prickly zareba does not occur to such a painful extent in Far Cathay as in the West. The nest of this bird seen in Europe is, as a rule, lined with roots inside of a mud coat, but in China, grass, hair, feathers, paper, wool, and, indeed, any suitable rubbish is employed.

In the autumn these birds form quite large flocks, and as many as sixty have been seen going to roost in a pine-wood at Samshui, and on one occasion forty-seven were put up out of a sweet-potato field.

At the end of December the flocks break up, and some pairs of birds begin to prepare for nesting before the new year; but, although they commence breaking off twigs early in January, they do not, as a rule, complete their nests until well on in February.

In some years, as late as the middle of March, about seventy-five per cent. of the nests examined contain no eggs, whereas in others the end of February sees most of them with full clutches. Fresh eggs were found, however, from February 5th to May 6th ; and of thirty-one nests, three had eight eggs, seven had seven, seventeen had six, and four had five—six therefore is the usual clutch.

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[*] All measurements of eggs are given in inches.

UROCISSA ERYTHRORHYNCHA.

The Chinese Blue Magpie is a very common resident at Hong Kong, where the amount of woodland is far in excess of anything to be found on the adjacent mainland, and where also there is practically no molestation. On the island of Hong Kong this species is not only abundant, but exceedingly tame and easy of observation. On the adjacent mainland, although it is present in the better wooded parts, it is never plentiful and very shy and wary.

This species is one which almost invariably goes about in small parties of four or more, and even in the breeding-season this arrangement holds good to some extent.

It is a bold and predatory species, robbing the nests of smaller birds of eggs and young on every possible occasion, and even attacking those of such large birds as its relative, the Common Magpie, which it was several times observed to do with success. So well are its thievish habits known to other species, that its appearance in the vicinity of their nests is invariably the signal for a general clamour, and most of them will boldly attack the robber.

Copsychus saularis, the Magpie-Robin, always the boldest of the bold, will dash at the Blue Magpie even when at a distance of fifty yards from its nest, invariably driving it away. At times, all the three species of Hong-Kong Bulbuls combine and mob the would-be robber, and even the Chinese Dove (*Turtur chinensis*) attacks this bird, dealing very severe blows with its powerful wings in mid-air. Not only does *Urocissa* rob nests of their contents, but a party was seen to chase and catch a young Tailor-Bird (*Sutoria*) which was well able to fly.

The Blue Magpie is omnivorous; small reptiles and mammals, insects, various fruits and berries, and even rubbish from human habitations, form its very mixed dietary. The flight is very graceful, especially when descending, the long tail streaming out behind seems to accentuate the gentle curves, which are its peculiar characteristic. When hopping about the branches of a tree the Blue Magpie looks rather clumsy, as if much incommoded by the inordinate length of its tail. On the ground this bird invariably advances by a series of clumsy hops, apparently it never walks, like the Common Magpie. When at rest in a tree or on the ground the tail is well folded, but on the wing the outer and shorter rectrices are invariably spread out, much to its advantage. The Chinese Blue Magpie breeds commonly at Hong Kong, though from the extent of the woods and the flimsy nature of its construction, the nest is very hard to find.

From the habit of going about in small parties it is difficult to say when pairing takes place, but the earliest nests are built at the end of March or the beginning of April, and breeding goes on through May, June, July, and August. It is undoubtedly double-brooded in most cases. The nest is a slight affair, made of thin twigs and lined with the aerial rootlets of the False Banyan tree and with finer twigs.

Almost always it is possible to see through the nest in every direction. In construction it is very flat and the central hollow containing the eggs is very shallow. A favourite nesting-site is the topmost twig of a thin sapling, but not infrequently the extremity of a horizontal bough is selected, and only once was the nest found in a strong fork near the main trunk. Firs are, perhaps, the favourites with this species, but a variety of deciduous trees has also been noted as used.

Both birds assist in building the nest, which is usually about twenty feet from the ground, and the young of a previous brood have been observed sitting round a nest in process of construction.

The bird, unless the eggs are very hard-set, usually slips from the nest without any demonstration, and then sometimes chatters from a distance or flies overhead scolding.

When young are present, on the contrary, it may be very bold, swearing and scolding and coming so close that it could easily be struck with the hand.

The eggs are usually five in number, and have been described by Mr. La Touche, but two varieties require to be mentioned: one of these has the usual greenish-yellow ground thickly speckled all over with closely-set dark green spots of small size; the other has the specks distributed in the same fashion, but they are of a rusty-red colour, so that the general appearance of the specimen is rather like that of certain eggs of *Merula merula*.

Of all the Hong Kong birds, the Blue Magpie possesses the greatest variety of notes; these range from a flute-like whistle to harsh guttural cluckings, and at times almost amount to a song, being continued with various modulations for as much as five or ten minutes.

The bird is very noisy all through the year, though perhaps a little less so in May and June, when the breeding-season is at its greatest period of activity.

The earliest date at which eggs were found at Hong Kong was April 10th; in this case the eggs were well incubated.

Eggs vary in length from 1·22 to 1·04, and in breadth from ·87 to ·81; they average 1·16 × ·83. An example will be figured on Plate V. fig. 17 of the April number.

DENDROCITTA SINENSIS.

The Chinese Hill-Magpie was only met with on one occasion, on November 20th, 1900, when a specimen was obtained at Shek-Wan opposite to Macao, just outside the British territory of Kowloon.

GARRULUS SINENSIS.

The Chinese Jay is not uncommon in the virgin forest at Howlik, which it visits at the period of spring migration; Mr. J. C. Kershaw obtained it at Macao, where it is rare.

ORIOLUS DIFFUSUS.

The Indian Oriole is a common summer visitor to the Delta country and to the West River, but was not seen on the island of Hong Kong.

They arrive about the 8th or 10th of April, and at once commence chasing one another, and uttering many and various courting notes, which are not heard after pairing has taken place, when they confine themselves to their sweet and flute-like little song.

The nests of this species are well known and do not need to be described; in Kwang Tung and Kwang Si they are usually placed in a Bombax or a fir-tree, but not infrequently in a Banyan, always at a considerable elevation, and at the outer extremity of a thin branch, where they are most difficult of access.

The eggs are to be found, as a rule, in the third week of May, but occasionally much earlier, and a pair in the Yamen at Samshui had young a week old on June 1st.

On one occasion a male was seen to fly to a stump, from which he tore off strips of bark and carried them away.

These birds are very truculent, and the pair in the Samshui Yamen wage incessant war on the Chinese Blackbirds, which build in the same tree.

It is doubtful whether two broods are reared, but fresh eggs have been found as late as July 5th. The usual clutch is four eggs; often three, and sometimes only two are laid.

The old female sometimes assumes the colouring of the male, and a pair, both with the brilliant plumage of the cock, were seen to have a nest.

In the third week of August the Orioles take their departure, but an occasional bird may be seen as late as September 28th, whilst on rare occasions an individual will spend the whole winter in Kwang Tung.

The eggs of this species average 1·13 × ·80, and they vary in length from 1·75 to 1·06 and in width from ·87 to ·77.

Chibia hottentotta.

These Drongo-Shrikes are summer visitors to the forest at Howlik in Kwang Tung, the only place in that province where they occur, but they are common enough in Kwang Si, especially at Kwei Hsien. They arrive about the third week in April, and have disappeared from Howlik by the last week of August, but they have been seen at Macao and Wuchau in September and October. They are very noisy, calling loudly to one another, especially after the young are able to fly.

The nest is an exceedingly flat and flimsy affair, attached to a fork at the very end of a slender horizontal bough, at heights which vary from fifteen to forty feet, and in such a position is sometimes quite inaccessible. It is made of grass and lined with fine grass or roots; the rim is the most substantial part of it and the eggs or young can usually be seen through its bottom.

When the nest is approached the birds are very fearless, dashing round the tree and in and out among the branches.

They commence to lay early in May, and young birds have been found early in June; three is the usual clutch, but four have been found; one brood only is reared.

These birds catch insects on the wing, and hawk until quite dark; they drink also during flight like Swallows.

Eggs vary in length from 1·15 to 1·03 and in breadth from ·83 to ·79, and eight eggs average 1·08 × ·81. (See Plate V. fig. 16 of the April number.)

BUCHANGA ATRA.

The Black Drongo-Shrike is a common summer visitor to Kwang Tung, but there, with one exception, it is confined to the coast; it does not occur in Kwang Si, where *Chibia hottentotta* replaces it. Away from the coast this species occurs only at Tak Hing, on the borders of Kwang Si Province—a very curious distribution.

The first arrivals in the spring are met with about the middle of April, and by the end of that month they are plentiful, but only on the coast. Of those returning from further north, the third week in September sees the first arrivals, but plenty continue to come in through October, and some have been occasionally met with in November and even in December; but this last date is unusual.

The cry of this bird is very harsh and is constantly indulged in. They are very fierce, dashing in a bullying way at various other birds, and mobbing such inoffensive species as the Smyrna Kingfisher. They catch their prey on the wing, and hawk for it until quite dark, and they have been known to capture such a nauseous insect as *Euplœa superba*.

This species begins to build its nest early in May, and eggs have been taken from the third week of that month until the second week in June. The nest is usually placed, like that of *Chibia*, at the extremity of a horizontal bough, but not always, and an upright fork is sometimes used. When building on a horizontal bough they begin by making the outside rim, joining the two prongs of the fork first—the one away from the trunk, that is to say. The nests are made of grass or of lichen, and sometimes, as at Hong Kong, of the aerial rootlets of the banyan-tree.

Although not so flimsy a nest as that of *Chibia*, it is still sometimes possible to see the eggs through the bottom. These are three or four in number. In the nest of this species *Cuculus micropterus* lays its eggs at times, as is noticed elsewhere.

The eggs are reddish pink in colour, spotted with ash and reddish brown, chiefly at the larger end, and vary in length from 1·14 to ·92, and in breadth from ·83 to ·70 : they average 1·02 × ·75.

BUCHANGA CINERACEA.

The Ashy Drongo-Shrike is found as a summer visitor at Kwei Hsien, where it breeds, and it was once noticed at Tak Hing in Kwang Tung.

An old nest found at Kwei Hsien was made of grass and constructed like that of *Buchanga atra*.

The note of this bird is loud, metallic, dissyllabic, and quite unmistakable. On February 16th, 1908, one of these birds arrived at Hong Kong, and remained there until the middle of April, in the vicinity of the Naval Hospital and Happy Valley. This is the only occasion on which this species was ever seen in the island, which is some hundreds of miles from its usual habitat.

BUCHANGA LEUCOGENYS.

This Drongo-Shrike is a summer visitor, and breeds only at Howlik Forest, where it is rare. It was seen at Macao on April 22nd, at Howlik on the 21st, and also up the North River on May 1st, 1905, on migration.

On May 22nd a nest of this bird was found at the extremity of a horizontal bough of a pine-tree, twelve feet from the ground. It consisted of a ring of lichen and strips of fine bark matted together with cobwebs and a cup lined with fine pine-needles; it contained three fresh eggs, and the bird flew down on to the ground and laid a fourth whilst under observation.

A second clutch of three eggs slightly incubated was found on June 16th at the same place.

On May 26th after heavy rain, winged termites began to fly between 6 P.M. and 8 P.M. and continued to do so for some days: each night these were hawked for in the dark by *Chibia hottentotta*, *Hirundo striolata*, and the present species.

This Drongo was not observed passing to the south on its autumn migration, as was the case with several other species.

Four eggs vary in length from ·95 to ·89 and in breadth from ·70 to ·64, and average ·91 × ·68. (See Plate V. fig. 12 of the April number.)

CAMPOPHAGA MELANOPTERA.

This Caterpillar-eater is a summer visitor, and, as a rule, arrives late in April and leaves again about the middle of August. On October 14th, 1906, a bird of this species was observed for some hours at the Naval Hospital, Hong Kong; probably it had strayed from the rest of its kind on migration.

They breed on the West River, and commence to build their nests early in May. These are very beautifully made and are exceedingly small for the size of the bird; they are constructed of lichen matted together with cobwebs, and sometimes, but not always, lined with fine grass; they are usually situated at the extremity of a slender horizontal bough and are well concealed.

This bird is double-brooded, second clutches being found at the end of June and early in July.

Both sexes incubate the eggs, for one was seen to go to a nest, peck the individual in occupation, and having turned it off, to settle down on the eggs itself. Also eggs are laid at times in nests not finished, and the bird has, whilst sitting, been observed to be smoothing the edge of the nest, but as this was late in the season perhaps haste was necessary and eggs were laid before the nest was completed for that reason.

The first clutch usually contains four eggs, the second not more than three and often only two.

The bird was last seen on August 19th at Howlik. The latest eggs were taken on July 7th.

Eggs vary in length from ·99 to ·86 and in breadth from ·73 to ·66, and average ·94 × ·70. An example will be figured on Plate V. fig. 11 of the April number.

PERICROCOTUS SPECIOSUS.

On January 1st, 1906, at Fu Wau, about ten miles from Sam-shui, a single bird of this species was seen amongst some pine-trees. A fortnight later, at the foot of the hill at Howlik, a party of these birds was noticed accompanied by one male *Pericrocotus brevirostris*. Three *Pericrocotus speciosus* and the specimen of *Pericrocotus brevirostris* were obtained.

On February 8th, 1906, in the British Yamen, in the heart of Canton City, one of these birds was seen.

This Minivet does not shew the same partiality for the tree-tops as *Pericrocotus griseigularis*, and two were shot less than ten feet from the ground. They are very restless birds, hovering for a moment before a leaf or a berry; they pick off from it their insect prey, then fly to a branch from which they again dart off in further search of food. The crops of those examined were full of insect-remains, beetles, grasshoppers, &c.

None of the birds observed on the West River uttered any note.

PERICROCOTUS BREVIROSTRIS.

A male of this handsome Minivet was obtained from among a flock of female *P. speciosus*, as has just been mentioned. The bird was quite silent, and its crop was full of insect-remains. It was rather far to the eastward of its habitual range, and may be considered a very unusual winter visitor.

PERICROCOTUS ROSEUS.

This Minivet is a summer visitor to the Kwang Tung coast and the West River, but, as a general rule, it does not stay to breed in Hong Kong or the Kowloon Peninsula. The earliest arrivals come in about the first week in April, and by the middle of that month there are a great many, chiefly in pairs.

Their screeching is unmistakable and is only practised when they are in the air. When, as happened at one locality, there are some superfluous unpaired males, the latter attach themselves to one of the pairs, and all three can be seen flying together screaming.

On one occasion when young were about, a male of this species was observed to sham being wounded and to fall a distance of thirty feet into the mulberry-canes.

At times this bird may be seen to perch lengthwise on a bough instead of across in the usual manner.

Nest-building commences about the third week in April, and eggs can be found all through May and sometimes in June and July, but it is doubtful whether a second brood is often attempted. The nest is a beautiful structure, small for the size of the bird, and, although not carefully hidden, most difficult to see; it is placed sometimes on an upright fork and sometimes on a horizontal limb, but never much more than thirty feet from the ground and often a great deal less.

The birds themselves, however, prefer the tops of the highest trees. Banyans and firs are rather favourite trees for nesting-operations.

The eggs are usually three, but four have been found. They are of a greenish-white colour, spotted rather sparingly all over with ashy, yellowish, and purplish brown, chiefly round the larger end; the markings may be massed together and over-spotted with darker brown.

When the hen is sitting the male keeps watch in a neighbouring tree and gives her timely warning of an intruder's approach, when she silently slips off her eggs and joins him in the air.

Eggs vary in length from ·82 to ·74 and in breadth from ·62 to ·58; they average ·77 × ·60. An example will be figured on Plate V. fig. 6 of the April number.

Its food is chiefly insects with occasional green seeds.

PERICROCOTUS GRISEIGULARIS.

Small flocks of this species occur every winter at Howlik, but nowhere else in Kwang Tung or Kwang Si; they consist almost entirely of females and confine themselves to the tree-tops. These Minivets have been observed to hover before berries, after the fashion of *Phylloscopus proregulus*, and their food, as demonstrated by their crops, appears to be partly seeds and partly insects.

PERICROCOTUS CINEREUS.

The Ashy Minivet occurs only on passage during the spring and autumn migrations, and is much more easily observed on the former.

About April 5th a flock is always to be seen on a certain clump of trees at Samshui; many of these are immature and most of them are females; they are very silent, perhaps because of the scarcity of males, and they soon pass on to the north again. Up the North River a few of these birds were seen in May, but apparently they were not breeding.

At the end of October and early in November a small party has been seen at Samshui, passing south, but in all probability most of them go through at night. They fly high at this time of year, and are in haste to be gone.

HEMICHELIDON GRISEISTICTA.

Muscicapa griseisticta (Swinh.); Sharpe, Cat. B. M. iv. p. 153.

This little Flycatcher passes through in October and May on its migratory journeys, and has been seen as early as the 9th of the former and as late as the 17th of the latter month.

Although a common bird, this species is always outnumbered by *Alseonax latirostris* in the proportion of five to one, and unlike the latter does not dawdle on its passage but hurries through and is often found in company with the larger *Phylloscopi*. This bird has the typical Flycatcher-habit of dashing at an insect from a selected perch, to which it invariably returns.

HEMICHELIDON FERRUGINEA.

This Flycatcher is a rare bird of passage, and has only been obtained three times (twice on April 6th and once on April 10th) at three widely separated stations (Macao, Mirs Bay, and Samshui).

ALSEONAX LATIROSTRIS.

These are the most abundant of the Flycatchers which pass through on migration, and they have been seen from April 16th to May 24th, and from August 31st until November 22nd, dawdling through in small parties and remaining for ten days or a fortnight before moving on, whether they are proceeding to the north or the south.

Occasionally an individual remains at Hong Kong for the winter.

In habits this species closely resembles *Hemichelidon griseisticta*, and, like it, is invariably silent.

SIPHIA ALBICILLA.

Muscicapa albicilla Pall.; Sharpe, Cat. B. M. iv. p. 162.

A small party of these birds passed through Samshui on migration on April 6th, 1907. Another haunted a stream near the Naval Hospital at Hong Kong for some days in the spring of 1903.

CYORNIS HAINANA.

Cyornis hainana O.-Grant, Bull. B. O. C. x. 1900, p. 36.

Numbers of these Flycatchers pass through on migration from March 25th until the end of April and again in September, but a few remain to breed at Howlik and also in Kwang Si, whilst an occasional bird has been observed during the winter months at Macao.

The male sings a sweet and powerful song throughout the day during the breeding-season; it resembles that of *Copsychus saularis*, but is even better—though not improved by an occasional metallic "click"; it also possesses a "teck! teck!" note, not unlike that of a *Phylloscopus*.

A male of this species was seen to attack and drive away *Amaurornis phœnicurus* at Howlik on May 24th; probably the nest was not far off, but unfortunately was not found.

POLIOMYAS LUTEOLA.

This species passes through in the spring in small numbers, the earliest and latest dates on which it was observed were April 2nd and 17th respectively. Doubtless it returns in the autumn, but the closest scrutiny has failed to observe it on the passage south. This is the case with various other species, and although it is possible that they follow a different route on the return journey, it is perhaps more probable that they travel only at night.

These birds for the most part keep to the coast-line, but they were obtained as far inland as Samshui, which is about a hundred miles from the sea.

XANTHOPYGIA NARCISSINA.

The Narcissus Flycatcher is a common spring migrant, arriving as early as March 28th and leaving as late as May 4th, but it is most abundant during April, and, like sundry other species to which allusion is made in this paper, has not been observed on the autumnal journey.

Although these birds have a partiality for the shade of woods and for bamboo-groves, their colouring is so conspicuous that they are not easily overlooked, and, if scarcely to be described as gregarious, they are inclined to be sociable and are usually seen in small parties. When looking for insects they keep, as a rule, much nearer to the ground than other Flycatchers, but like them they utter no sound.

XANTHOPYGIA TRICOLOR.

This Flycatcher is another of those species which have only been observed on the spring migration, and although not common it is liable to be mistaken for *Xanthopygia narcissina.* Arriving during the last ten days of April, this bird passes through some three weeks later than *Xanthopygia narcissina.*

When hovering low down, close to the water, among scrub and undergrowth, this species with its black plumage and white alar speculum has a considerable resemblance to a butterfly, the yellow rump being inconspicuous.

IANTHIA CYANURA.

Tarsiger cyanurus (Pall.) ; Sharpe, Cat. B. M. iv. p. 255.

This little bird is a common winter visitor, arriving early in November and leaving again towards the end of March ; it is generally distributed both on the coast and inland, and in both the Kwang Provinces.

Extremely tame, this species inhabits woods and groves of bamboos, where it obtains most of its food upon or close to the ground, and is only very rarely seen at any height above it. In a dim light it is possible to mistake *Ianthia cyanura* for a female Redstart, for like the latter it is affected with "shivering fits."

CYANOPTILA BELLA.

Xanthopygia cyanomelæna (Temm.) ; Sharpe, Cat. B. M. iv., p. 251.

This beautiful blue Flycatcher is an exceedingly common bird of passage during the spring migration, not only on the coast but inland, and in Kwang Si as well as in Kwang Tung. Although seen as early as March 22nd, the main body arrives in April, and until the end of the third week of that month they abound everywhere, fresh flocks continually arriving to take the places of those that have moved on.

As in the case of certain other species, these birds have never been observed during their return journey. Whether they travel south by a more westerly route, or whether they make the autumnal migration entirely at night, is still unknown; but if they did occur, it is highly improbable that such strikingly handsome Flycatchers would be overlooked.

OREICOLA FERREA.

The Iron-grey Bush-Chat is a rare winter visitor; one was obtained on January 29th, 1903, at Kowloon and another at Howlik on January 10th.

HYPOTHYMIS OCCIPITALIS.

This species was found abundantly in the woods at Kwei Hsien, in central Kwang Si, where it evidently breeds. It is rather like a Flycatcher in its habits, dashing out to catch an insect under the shade of the foliage and returning to its original perch when the capture has been made. On July 15th one of these birds was observed singing a few brief notes and shivering its wings.

At Kwei Hsien there were plenty of young birds about; they are dark brown above and white underneath. The beautiful silvery cobalt-blue of the adult unfortunately fades after death.

On August 14th a considerable number were seen at Tam Chau, and Mr. J. C. Kershaw has noticed this species every year at Macao as it passes through on migration.

PRATINCOLA MAURA.

The Indian Stonechat is one of the commonest winter visitors to south-eastern China, arriving about October 12th and leaving again between the end of March and the end of April; during the last-named month its numbers continually diminish and are not replenished from districts further south.

In habits this bird exactly resembles *Pratincola rubicola* of western Europe, and perched on a small bush it utters a loud "tack! tack!" then, flying close to the ground, seeks a fresh eminence and repeats its cheerful call.

Early in the morning, whilst it is still dark, this bird sings a little song, but after sunrise it remains silent, except for its usual "tack! tack!" As is the case with many other winter visitors to this part of China, the majority of these birds are immature.

TERPSIPHONE INCII.

The Chinese Paradise Flycatcher is partly a bird of passage and partly a summer visitor; it was seen at various places on passage in April and September, whilst of three nests two were found in May and one in July.

This species is commoner in Kwang Si than in Kwang Tung, but it is only up the North River that males in the white phase of plumage were found breeding.

One skin, in white plumage, has faint traces of chestnut on two of the long tail-feathers.

A nest was four inches deep and three across, shaped like an inverted cone; it was built into a fork of a tree, the apex of the cone downwards, and was composed of moss, grass, vegetable down, spiders' cocoons, strips of old paper, and strips of bark loosely felted together with cobwebs. It was lined with fine grass.

Nine eggs average ·80 × ·56, and vary in length from ·82 to ·74 and in width from ·60 to ·54. An egg will be figured on Plate V. fig. 10 of the April number.

TERPSIPHONE PRINCEPS.

This beautiful Flycatcher is a regular migrant, passing through during the first half of April on its way north, and returning from the end of August until the middle of September; but unlike *Terpsiphone incii* it keeps to the coast for the most part, and has not been seen more than a hundred miles inland.

These birds make their spring journey at the wettest time of the year, when torrential tropical rains often pour down for days on end; and how they succeed in keeping their enormous tails dry, or how they steer with them in high winds, or how they make their way about in the dense undergrowth, are all problems, but undoubtedly they achieve these undertakings with complete success.

CULICICAPA CEYLONENSIS.

The Grey-headed Flycatcher occurs only as a winter visitor to Howlik; this is a considerable extension of its range to the eastward.

Seen among the tree-tops, this species may be very easily mistaken for one of the smaller *Phylloscopi*. It is very tame and has a sweet, shrill, and rather loud trill, and in its habits closely resembles *Alseonax* and *Hemichelidon*.

CRYPTOLOPHA TEPHROCEPHALA.

Cryptolopha affinis (Horsf. & Moore); Sharpe, Cat. B. M. iv. p. 398 pt.

The Flycatcher-Warbler is rather a rare winter visitor, in habits somewhat resembling *Phylloscopus superciliosus*, and like the latter is given to assuming the inverted position on a tree-trunk, and to hovering before a leaf on which insects are to be found; it, however, possesses a much sweeter note and a decided fondness for dense undergrowth.

This bird was only observed at Macao and in the forest at Howlik.

STOPAROLA MELANOPS.

This Flycatcher undoubtedly breeds in the woods of the monastery at Tam Chau, in Kwang Si, for on August 15th a male and an immature bird coloured like the adult, save for a brown-spotted throat, were shot, while a third was seen but not obtained.

In habits they do not differ from other Flycatchers of south-east China, but they were not heard to utter any note.

This species has also occurred in the spring at Macao.

PHYLLOSCOPUS BOREALIS.

Eversmann's Willow-Warbler must be looked upon as an irregular bird of passage, and like *Phylloscopus xanthodryas* is confined to the Kwang Tung littoral. Immense numbers of these little birds occurred in May 1907, about the middle of the month, and the stunted fir-trees on the hills about Macao were crowded with them for a week, after which they all disappeared.

PHYLLOSCOPUS XANTHODRYAS.

This Willow-Wren may be regarded as an accidental bird of passage, for it was only observed in September 1907, and was then confined to the coast, where quite an invasion took place.

Unlike most of the genus, this species loves to skulk in thick cover, whence it is with difficulty dislodged.

The note of this bird is a loud and distinct single "chink," easily distinguishable from the "teck! teck!" of *Phylloscopus superciliosus* and much like that which *Alcedo bengalensis* utters on taking to flight.

PHYLLOSCOPUS TENELLIPES.

This Willow-Warbler is a bird of passage both on the Kwang Tung littoral and inland, and was observed in April and early in May on the way north and on the return journey during September, but it did not linger on either. It is fairly abundant, and displays, like *Phylloscopus xanthodryas,* a partiality for the undergrowth of the small woods; its note is a very metallic "click."

PHYLLOSCOPUS OCCIPITALIS.

The Large-crowned Willow-Warbler is a very common bird of passage, and numbers were observed from April 4th to May 16th, and again from August 15th until the end of September. On one occasion this bird occurred at Macao on March 30th, and it is found in Kwang Si as well as in Kwang Tung.

The birds, usually in small parties, frequent open bushes as well as the tree-tops, and often hover in front of a leaf or flower whilst they pick off an insect.

PHYLLOSCOPUS SUPERCILIOSUS.

The Yellow-browed Willow-Warbler is the commonest of all the Willow-Warblers in Kwang Tung during the winter months; it arrives during the third week in September and leaves again in April. An exceptionally late individual has been seen early in May.

In company with *Phylloscopus proregulus, Sutoria, Zosterops,* and other small birds they are to be seen everywhere searching diligently for food, and are often observed hanging on to the trunks of the trees head downwards, after the fashion of a Tit.

The feathers of the head and neck are moulted in March, and the little song is to be heard at the end of that month.

Phylloscopus proregulus.

Pallas's Willow-Warbler is a common winter visitor; it arrives in October and leaves again in March, the latest date recorded being the 26th of that month.

This is an extremely tame little bird, much resembling the Gold-crest in its habits. Haunting the tops of the trees it hunts for its insect food all day, often hovering Humming-bird fashion whilst it picks its quarry from a leaf; it is never still for a moment.

In March they begin to moult the feathers of the head and neck, and during the latter part of the month commence their sweet and rather loud little song.

Acrocephalus bistrigiceps.

This Reed-Warbler appeared suddenly in May 1906, and swarmed for ten days in the reeds on every creek and waterway of the Delta country.

Some individuals also patronized the bamboos and all were in song and very noisy. The song, which was voiced very lustily, is rusty and creaky, and seems to be accentuated during heavy tropical rain.

After remaining some ten days the birds moved on and were never seen again. The unusual occurrence of this species which, as a rule, does not rest on migration is inexplicable to the writers.

ACROCEPHALUS ORIENTALIS.

The Chinese Great Reed-Warbler occurs on the Kwang Tung coast and on the West River as a bird of passage during the spring and autumn migrations. It passes through in a very leisurely manner, and shews more inclination for mulberry-canes and bamboo-scrub than for actual reeds, especially in the autumn.

The earliest date for spring migrants was April 22nd, and many were in the reeds and in full song from May 3rd to May 8th, the last was seen on the 16th of that month.

From September 5th until October 24th they were observed on the West River passing south.

LOCUSTELLA CERTHIOLA.

Pallas's Grasshopper-Warbler has been observed at Samshui from September 6th until October 15th, and it has also occured at Macao and Wuchau.

This bird, as is well known, is a great skulker and difficult to flush from the paddy; when put up it drops again and threads its way with astonishing rapidity through the stalks to rise once more well ahead of the place in which it alighted. It is never seen on its spring passage, but at that time the paddy-fields are all hard, dry, and bare and would offer it no cover at all. At this season the Snipe, whose habitat *Locustella* favours in the autumn, migrate to the mulberry-canes, but this little bird was never found there with them.

Possibly this species travels to the north by a different route from that by which it journeys south.

LOCUSTELLA LANCEOLATA.

This Grasshopper-Warbler was only obtained once, October 28th, 1907; but it is quite possible that this species may have been confused with *Locustella certhiola*, both being such confirmed skulkers and very difficult of observation.

LUSCINIOLA FUSCATA.

A common winter visitor, seen as early as September 30th and as late as May 9th, this little bird has a strong liking for hedgerows, bushes, and every form of undergrowth, but may also be seen, on occasion, in the open beside a pond or in the paddy-fields, and although not actually sociable a good many can be sometimes found in the same plantation.

At Samshui, on May 4th, there was an influx of this species on migration, many were in song, and all passed through without lingering.

Exceedingly tame, this little bird will approach very closely to an immobile observer.

Individuals vary much in size, and six specimens measured from 5¼ inches to 4½ inches in length.

CETTIA PALLIDIPES.

A specimen of this species was obtained at Macao on March 12th, 1907, but was not recognized as such until the collection was being worked out in London.

CETTIA SINENSIS.

Cettia sinensis La Touche, Bull. B. O. C. vii. 1898, p. 37.

This Warbler occurs during the winter months in small numbers, and frequents the same localities as *Lusciniola fuscata*, which species it strongly resembles both in appearance and habits. It arrives in November and leaves again in March, and whilst creeping about in the undergrowth, either singly or in pairs, it emits an indistinct grating note.

CETTIA CANTURIENS.

Although this bird, which arrives in October and remains until May, and sometimes until late in that month, is regarded as a winter visitor, it is possible that occasionally it remains to breed.

A female, which was thought to be a distinct species by Swinhoe on account of its much smaller size and was described as *Arundinax minutus*, was obtained on January 3rd, 1906, when it was in company with some *Lusciniola fuscata*, at the edge of a pond among bamboo-scrub.

This species, like many others of the smaller birds, has the greatest liking for the densest undergrowth, which it leaves with reluctance and to which it darts back again on the slightest provocation, or on no provocation at all. It hops restlessly from twig to twig whilst searching for food, and it possesses a sweet bubbling little song that may be heard in February and March, but it also has a harsh "burr," not unlike that of *Dryonastes perspicillatus.*

GEOCICHLA VARIA.

White's Thrush is only found in Howlik Forest, where a few spend the winter; from their great shyness they are rarely seen, though occasionally heard. Mr. J. C. Kershaw, however, heard them on the Lo Fu Shan Mountains, near Canton.

MERULA MANDARINA.

The Chinese Blackbird is a resident species, but is subject to a curious seasonal movement, for it is only during the winter months that it is found at Macao, where it is common, and at Hong Kong, where it is scarce. It breeds abundantly at Kong Mun, which is only fifty miles away from the former, and thence up the West River and inland.

On January 1st, 1906, at Fu Wan, fifteen miles below Samshui, where there is a great deal of wood, a flock of over twenty Blackbirds was seen: a most unusual thing. There was a fresh north wind blowing and it was very cold. Several smaller flocks were seen, so perhaps they were small parties migrating.

It usually places its nest on a horizontal bough against an upright fork of a banyan-tree, and at a considerable height from the ground.

About the end of April fresh eggs may be looked for, and as many as six clutches were taken on April 16th from the Magistrate's Yamen at Samshui.

The usual clutch is five, but four is not uncommon, and one of six was found on three occasions.

Eggs are met with until the middle of June, for this species is double-brooded, and it is especially among second layings that four eggs are to be noticed.

Two nests of this species were found in abnormal situations, one on the top of an old nest of *Graculopica* and one in a disused nest of a Crow.

Eggs average 1·10 × ·83, and vary in length from 1·25 to 1·06 and in width from ·91 to ·78.

MERULA CARDIS.

The Japanese Thrush is a regular but not a very common winter visitor, and during April the number is increased by a small stream of migrants from further south.

In habits, and especially in its alarm-note, this bird closely resembles the European Blackbird.

MERULA HORTULORUM.

Swinhoe's Thrush is much the commonest species of the genus ; it occurs as a winter visitor. Arriving as late as the middle of November and not departing until the first week of May, this bird affects woods and groves of bamboos, where it searches diligently for food among the dry and fallen leaves, sending them flying in all directions and making as much noise as a Chinese leaf-gatherer with his wooden rake. When disturbed, it utters a whistling or whirring note.

Many of these birds are immature, and the amount of chestnut-colour on the underparts and axillaries varies considerably.

MERULA CHRYSOLAUS.

This is an accidental winter visitor. One example of this species was obtained on April 6th feeding among the mulberry-canes upon the ground in company with *Turdus hortulorum*.

LARVIVORA SIBILANS.

Erithacus sibilans (Swinh.) ; Seebohm, Cat. B. M. v. p. 297.

This may be an unusual winter visitor or a rare spring migrant, and one only was obtained, on April 1st.

This bird keeps to the undergrowth and close to or actually upon the ground, and it has the Redstart-like habit of flirting the tail and of shivering.

CALLIOPE CAMSCHATKENSIS.

Erithacus calliope (Pall.); Seebohm, Cat. B. M. v. p. 305.

The Siberian Ruby-throat is rather a rare winter visitor, but it has such very skulking habits that it is seldom seen. One was shot at Kong Mun from a boat in mistake for a rat, as it was running among some reeds close to the water's edge. It is a favourite cage-bird among the Chinese, both at Hong Kong and Canton.

CYANECULA SUECICA.

Erithacus cæruleculus (Pall.); Seebohm, Cat. B. M. v. p. 308.

The Red-spotted Blue-throat is a winter visitor to the two Kwangs, arriving September 1st and leaving again in February, March, and sometimes as late as mid-April.

Owing to its skulking habits and preference for the marshland, this species is not much in evidence and those obtained were shot whilst working the Snipe-marshes. Here they rose under the feet to drop again almost immediately, so that energy and ability were required in beating them out of cover, and in spite of much effort they not infrequently escaped.

RHYACORNIS FULIGINOSA.

Xanthopygia fuliginosa Sharpe, Cat. B. M. iv. p. 253.

The Plumbeous Redstart is a common winter visitor, and occasionally a pair remain to breed, but the majority seem to be immature.

For the most part these birds haunt the rocky mountain-streams, but they are occasionally seen by ponds or on the river-banks.

This species arrives in August, and on April 10th all the winter visitors had left. On April 22nd a female was observed feeding three young at Howlik, which were well able to fly, and as the bird is known to nest on the banks of streams in India, these had doubtless been hatched close by.

MONTICOLA SOLITARIUS.

The Red-breasted Blue Rock-Thrush is a common winter visitor to Hong Kong and the Kwang Tung coast generally, and goes inland to the borders of Kwang Si.

The numbers of this species vary considerably in different years, sometimes a great many remain all through the winter months, and in other years all seem to pass rapidly through. At first these birds shew a tendency to hang about the seashore, but they soon betake themselves to woods and gardens and are not shy.

From about the middle of October and until the middle of November there is a considerable influx of these birds, and they were seen as late as May 11th at Hong Kong. It has been stated that this species sometimes breeds near Macao and at the Marble Rocks, Samshui, but no eggs were taken by the writers.

MONTICOLA CYANUS.

The Blue Rock-Thrush is perhaps rather more common than the red-breasted form, and most that applies to the one does so to the other, but it does not occur inland. There is no doubt that in some years birds with blue breasts are more common than birds with red, and also that the former tend to arrive at different times from the latter; but, on the other hand, it also happens that birds of all grades of red and blue colouring may occur in the same rush of migrants.

This bird is as tame as the other Rock-Thrush, and may often be seen perched on houses and railings, shewing rather a partiality for the vicinity of human beings.

RUTICILLA AUROREA.

The Daurian Redstart is a common winter visitor to the Kwang Tung coast, but its numbers vary considerably in different years. The earliest date in the autumn on which this bird was seen was October 30th and the latest in the spring March 24th.

This bird has the habit of shivering its tail from side to side, like the common European Redstart, and it utters a feeble whistling call as well as a sound resembling the tapping together of two pieces of hard wood.

HYPSIPETES LEUCOCEPHALUS.

This Bulbul was observed on three occasions only: on April 29th, 1905, up the North River a flock of a dozen were encountered, and on February 25th, 1905, and January 3rd, 1907, single birds were shot on the West River, so that this species is an accidental visitor.

HEMIXUS CANIPENNIS.

Hemixus canipennis Seebohm, P. Z. S. 1890, p. 342.

This Bulbul only occurs at Howlik Forest during the winter months, when it is to be met with in small flocks, feeding on berries in the tree-tops. In general habits it resembles other Bulbuls, but has a different call to any of the commoner species.

The only examples obtained were collected in the month of January.

PYCNONOTUS ATRICAPILLUS.

The Chinese name "Ko-Kai-Kwun" means "with the high-crested hat."

This Bulbul occurs on the coast and inland, but always shews a decided preference for sparsely wooded hills and for localities at a distance from human habitation. This species has a cheerful ringing call. It is partly resident and partly migratory, and in the autumn and spring large flocks are often seen.

The food consists partly of seeds and berries and partly of insects.

The Black-headed Bulbul invariably attacks the Chinese Blue Magpie (*Urocissa erythrorhyncha*) whenever that marauder approaches its nest, and with much clamour and great valour always drives the thief away.

The nest, a flimsy structure, is usually placed in a fir-tree, and often at a considerable elevation.

The eggs vary from two to six in number but are usually three or four, and are of the common Bulbul type.

This species, like the other breeding Bulbuls, is double-brooded.

Eggs vary in length from ·94 to ·77, and in breadth from ·70 to ·63; they average ·89 × ·65. (See Plate V. fig. 21 of the April number.)

PYCNONOTUS SINENSIS.

The Chinese name is "Pak Tau Long," *i. e.* "the white-headed fellow."

The White-eared Bulbul is the commonest of the three breeding Bulbuls found in the area under discussion, and is equally abundant on the coast and inland. It has a partiality for the lower levels, for cultivated land, and for the neighbourhood of houses and gardens.

In the winter months the numbers of this species are largely augmented by the arrival of migrants from further north, and in November and December considerable flocks are seen, and again, in March and April, when many move away for the summer. During the rest of the year they are seen in small parties or in pairs.

The bird has a small and very monotonous song, which it continually repeats at all times of the year, and perhaps more persistently during the summer months.

The food consists partly of insects and partly of seeds and berries, but this Bulbul is almost omnivorous. It captures insects in the air exactly after the manner of a Flycatcher, returning always to the perch from which it started.

The nest is a slight affair, somewhat resembling that of a White-throat, and usually light can be seen through the bottom. It generally contains some wild cotton, and is sometimes lined with fine grass and sometimes with horse-hair; it is placed in a bush or tree at elevations of from three to twenty feet above the ground, and when hidden in a dense mass of creepers is difficult to see.

The eggs are usually three, sometimes four and rarely five, and are indistinguishable from those of the other breeding Bulbuls.

The breeding-season is from the latter part of March until the end of August, and at least two broods are brought off.

Eggs vary in length from ·96 to ·77 and in breadth from ·70 to ·63, and average ·85 × ·65. (See Plate V. fig. 13 of the April number.)

OTOCOMPSA EMERIA.

The Chinese name "Ko Kai Kwun" means the "high-crested lady."

This handsome Bulbul is a fairly common resident at Hong Kong, Macao, and on the coast generally, but it becomes less abundant inland.

Like the other two common species the Red-cheeked Bulbul is partly migratory, and large flocks are observed in the spring and autumn. Its song is most monotonous, and is repeated with maddening persistency.

This bird was not observed by Swinhoe in 1860 at Macao or Hong Kong, although he found it plentiful at Canton.

The nest is much like that of *Pycnonotus sinensis*, and is placed in similar situations, and the eggs are indistinguishable from those of that species.

The breeding-season is from March until August, and three is the most usual clutch. Eggs vary in length from ·92 to ·79 and in breadth from ·69 to ·59, and average ·82 × ·64. (See Plate V. fig. 20 of the April number.)

ANORTHURA FUMIGATA.

This Wren was only once obtained. This was in the forest of Howlik, where it was hopping about on some dead branches near a stream. It had a note somewhat like that of a Grey Wagtail.

CINCLUS PALLASI.

One pair of these Dippers was found to frequent the stream which flows through the forest at Howlik, and they seemed in habits and diet to closely resemble the common British species.

Eggs of this bird were not obtained, but a nest placed in the crevice of a rock overhanging the water closely resembled that of *Cinclus aquaticus*.

On July 5th, 1905, the female was shot, but the male never took another mate, so that this species is perhaps what might be described as a sporadic resident.

MYIOPHONEUS CÆRULEUS.

The Chinese Blue Whistling-Thrush is a common resident at Hong Kong, Macao, and on many of the small islands in their vicinity. The only place away from the coast in which it occurs is Howlik, about twenty miles from Samshui, where it is also resident.

This species has a great partiality for running water, far from which it is seldom found, although at times a dried-up nullah seems to attract it. When settling on a boulder it has a habit of suddenly spreading out its tail fanwise, which is very attractive. Its usual note is a low, mournful, but very penetrating whistle, repeated at intervals and quite unmistakable for that of any other species.

In the breeding-season the cock on rare occasions gives vent to a variety of whistling notes, which, although hardly amounting to a song, are very pleasing to the ear. When alarmed the cry is a shrill whistle, sharper and louder than the ordinary note.

The nest is a massive well-built structure, always largely composed of moss and rootlets, and lined with the aerial rootlets of *Ficus retusa* and a few dead leaves.

At Howlik the nest was usually placed under the eaves of a small temple, and at Hong Kong on a ledge or other projection of masonry; under a bridge is a favourite situation, or an empty overflow water-pipe of sufficient calibre has been employed; but perhaps the site most preferred is one of the huge piles of granite boulders so common on the Kwang Tung coast, and when so placed it is practically inaccessible.

Both at Howlik and at Hong Kong the nest has been found in a tree. This bird shews great partiality for certain nesting-sites, returning to them year after year.

The food of the allied species in India is said chiefly to consist of snails, but in Kwang Tung it is mainly of insects. It smashes the large Cicada (*Cryptotympana recta*) on a stone, after the manner of the English Song-Thrush with a snail.

The eggs are usually four, but not infrequently only three, and sometimes only two. In some clutches the bluish-green ground-colour is much more obvious than in others, and in some it is almost entirely overlaid by the reddish-brown markings. This species is double-brooded, the first clutch being laid about the middle of April and the second in June or July.

Eggs vary in length from 1·46 to 1·22 and in breadth from 1·03 to ·95 ; whilst they average 1·36 × 1·00. An example will be figured on Plate V. fig. 22 of the April number.

COPSYCHUS SAULARIS.

The Chinese name is "Chu shi cha," *i. e.* "Pig's Dung Bird."

The Magpie-Robin is one of the commonest birds throughout all the area under discussion. It is a resident, and is notorious for its partiality for human habitations and the vicinity of mankind.

Very popular with the Chinese as a cage-bird, for it is a fine singer, the nests are anxiously looked for on the West River, with a view to appropriation of the young.

This, a scanty affair of twigs, grasses, and aerial rootlets, is generally placed in a hole in a tree or building; but has been found on the top of a stump or in an old Magpie's or Grackle's domicile.

The Magpie-Robin is double-brooded, the first eggs being laid in April and the second clutches late in June or early in July.

This bird sings before daybreak in the spring, and at that time of year a couple of cocks may often be seen furiously chasing each other, apparently for the possession of a hen.

The Magpie-Robin always has certain favourite perches from which it gives vent to its song during the breeding-season, and the use of which by any other species it always strongly resents. No bird objects more strongly to the approach of *Urocissa erythrorhyncha* than *Copsychus saularis*, and none attacks that predatory species with more vigour when it has eggs or young.

This bird is insectivorous, and to see it trying to get through the chitinous covering of the large Cicada (*Cryptotympana recta*) is very amusing. It is fond of spiders, and has been seen to make a swoop at one of the large solitary wasps (*Pompilidæ*) struggling with a big spider, which it promptly dropped, when *Copsychus* at once snapped it up! It was entertaining to see the wasp afterwards, carefully quartering the ground to see what had become of its prey!

Eggs vary in length from 1·01 to ·83 and in breadth from ·70 to ·61, and they average ·87 × ·66. (See Plate V. fig. 14 of the April number.)

PRINIA INORNATA.

The Indian Bush-Warbler is a common resident species in both Kwang Tung and Kwang Si, and breeds in May, June, July, and August.

Usually the nest in this part of the world is placed in reeds fringing the river-bank, or the muddy shores of some island in the Delta; but where reeds are not available bamboos and saplings at a height of about five feet are made use of. At Moto in the Delta so many of these birds breed in the reeds that almost a colony is formed.

Contrary to what is reported in India, five is the usual clutch and four is exceptional in south-eastern China.

After the breeding-season is over these birds frequent the scrub and undergrowth away from the river.

Eggs average ·59 × ·43, and vary in length from ·63 to ·54, and in width from ·47 to ·41. They will be figured on Plate V. figs. 4, 5 of the April number.

BURNESIA SONITANS.

This Wren-Warbler is a common resident in both the Kwang Provinces; creeping about in the undergrowth and taking short flights from bush to bush, it makes a slight snapping noise. It breeds from May until August, and it is possible that as many as three broods are brought up in the year. The earliest date for fresh eggs was May, and the latest August 2nd.

The rapidity with which a brood can be hatched is well illustrated by the following:—

On May 15th an incomplete nest of this bird was found; this on June 1st contained two infertile eggs and three young, so that, at the outside, incubation does not take longer than about eleven days. The nest is placed in a clump of small bamboos, a few feet from the ground. One, however, was found built on the top of a new, but incomplete, nest of *Prinia inornata*, among reeds and right out in the shallows of the river, an unusual situation; it was copiously relined with dry grass, which extended above the hole, in contradistinction to what obtains in the case of *Prinia*.

The nests fall into two common types: both are bottle-shaped with the entrance-hole near the top, about six inches high and three wide; but one is built of coarse grass both inside and out, and the other is of flowering grass-heads and lined with the same. One nest was found which was made outside of skeleton leaves, a little moss bound together with cobwebs, and lined with fine grass-stalks.

The earlier clutches contain four or five eggs, but in the later ones three form a full complement.

Eggs are bright reddish chestnut, and measure from ·62 to ·54 in length, and in width from ·48 to ·43, and they average ·59 × ·45. One will be figured on Plate V. fig. 8 of the April number.

SUTORIA SUTORIA.

The Tailor-bird is one of the commonest residents, both on the coast and up the river, and its loud cry of "chink,

chink," so out of proportion to its size, is continually to be heard, both in gardens and in the woodland.

The most remarkable thing about this cheerful bird is its wonderful and beautiful nest, and as a great deal of time was spent in observation of it during nidification rather full notes are given on this interesting subject.

As all the world knows, the Tailor-bird makes a receptacle or bag in which to build its nest, by stitching together the free edges of one or more large leaves. In the majority of cases two large leaves growing near to one another are united to form a bag, but in a considerable minority the free edges of a single leaf of sufficient size are approximated, and in two cases three leaves were stitched together to receive the nest.

The first operation is to pierce the selected leaf or leaves, which the bird does with its bill, at a half to an inch from the free margins, always making a far larger number of holes than are subsequently threaded with the cotton strands.

The first stitch is invariably put in about halfway down the leaf, and the two edges are closely approximated by it, and this is done by knotting first one end and then the other of the cotton strand.

After placing the first stitch in position others are put in between it and the free extremity of the leaf or leaves in order to complete the bag, and it is rare for any to be inserted nearer to the stalk.

Having completed the bag the bird proceeds to fill in the tip of it with vegetable down, or at Hong Kong, where it is available, with soft brown material from the crown of the opening Sago-palm, and having thus made a solid base builds upon it a small round nest of very fine grass, and lines it with the down aforesaid and a few feathers.

Now, although at the completion of the leaf bag, the edges of the leaf or leaves are always closely approximated, when the nest has been built they are invariably widely gaping, the contained structure, so to speak, striving to burst through, so that it follows that the cotton strands must contain elastic material, for no matter how much they stretch they never break.

The long axis of the leaf bag, with the nest in it, is always either horizontal or inclined at an obtuse angle to the ground, so that the whole is most beautifully waterproof in the heaviest tropical downpour, and the contents are, moreover, hidden from view from above, which tends to save them from Magpies and other winged marauders.

From careful observation of Tailor-birds in the grounds of the Naval Hospital at Hong Kong it appeared almost certain that a pair of birds always makes use of the leaves of the same plant in constructing the receptacle for the nest, and that those individuals which make it of two leaves on one occasion do not on another make it of one leaf, and *vice versâ.*

No species is more easily alarmed or more readily forsakes an incomplete nest, and often it is sufficient to have looked at it from a distance of several yards to frighten the birds into beginning a new one.

The nest is not easy to see, though, as a rule, the white knots on the green of the leaf reveal its presence, especially when attention has been directed to a likely bush by the anxious calling of the Tailor-birds.

Almost invariably the nest is placed low down, at elevations of from one to three feet, very often in quite a small plant, and only twice was it seen as high as six or seven feet above the ground.

Like many resident birds *Sutoria* shews considerable preference for certain localities, so that the nest of one season is often placed at a distance of a few yards only from that of the previous year.

The leaves of the following plants are those most affected for making the receptacles for its nest :—*Lisea polyantha, Callicarpa tomentosa, Ficus chlorocarpa,* and the largest of the *Melastomaceæ.*

As is well known, the eggs of *Sutoria* are either bluish or white in ground-colour, with reddish markings, and it is very curious that the white variety is exceedingly scarce on the coast, whilst the greenish variety is equally rare up the river and away from the sea.

The eggs of this species may be found from the end of March until August, but the majority are laid in May and June.

The average measurement of a very large number of eggs is ·60 × ·46, and they vary in length from ·66 to ·56 and in width from ·47 to ·43.

CISTICOLA CISTICOLA.

The Rufous Fantail Warbler is a common enough bird in the winter months in Kwang Tung, though owing to its retiring habits is not greatly in evidence. On April 13th there was a very heavy migratory movement and the elephant-grass on certain of the islands in the West River was swarming with these birds.

The note was thought to resemble that of a Whinchat, and was uttered from the top of a small bush during the breeding-season.

These birds are numerous early in the year in the Snipe-marshes. At Kwei Hsien, in Kwang Si, numbers were found breeding in mid-August, and the nests appeared to be of the usual type found in India; they were constructed by drawing together the component stalks and blades of a tussock to make a sort of tube, and binding them with wild cotton or cobwebs. The bottom of the nest seemed always to have a good firm pad.

Five or six eggs, or young, were often found to be the usual clutch, and the larger number is apparently not found in India.

The pale blue unspotted phase of colouring in the eggs of this species apparently does not occur; but one clutch, so coloured but with the usual markings, was obtained.

Eggs vary from ·63 to ·55 in length and in width from ·47 to ·43, a large number average ·58 × ·45.

HENICURUS SCHISTACÆUS.

The Forktail occurs only in the forests at Howlik and on the Tung On Rapids (fifty miles above Samshui), where it is a scarce resident, for two pairs only were observed at the former and one at the latter.

It is extraordinary how these little birds keep their long tails dry as they hop from rock to rock and catch their insect prey in the spray of the mountain-streams. They have a strident, metallic, but not unpleasant note.

On May 21st, 1907, Mr. J. C. Kershaw found a nest of this species containing four eggs; it was situated on a ledge in a bank by the side of a stream, and was dripping wet. The nest was chiefly composed of moss and lined with skeleton leaves and a few dry grass-stalks, and closely resembled the description of those which this species builds in India.

Four eggs average ·87 × ·66.

TROCHALOPTERUM CANORUM.

The Chinese name "Wa Mei" means "Painted Eyebrows."

Of all the Hong Kong Thrushes this is by far the commonest, although from its skulking habits it is not greatly in evidence. In April and May, however, the number of these birds to be heard singing in the woods is remarkable.

Although the Chinese regard them as exclusively hill-dwellers, in Hong Kong they are quite as common near the sea-level as higher up in suitable localities. They were frequently heard in the grounds of the Naval Hospital, and just outside its boundaries their nests have been found.

Although the Laughing-Thrush sings in every month of the year at Hong Kong, its beautiful song is chiefly to be heard in April, May, June, and July, and the cock prefers, when singing, to perch on some slightly elevated position, such as a tree-stump or a small bush. At such times he seems to lay aside much of his natural wariness, so that he is then easily approached.

The birds feed on insects, for which they may, by careful watching, be seen diligently searching in the scrubby bush which clothes so much of the Hong Kong hill-sides. When so engaged they give vent to harsh guttural chuckings, very unlike the tones of their songs. They make a considerable noise, scattering the dead leaves in all directions in the search for food, and by this may often be localized long before it is possible to see them.

They nest from the beginning of April until July, and undoubtedly produce two broods in the year. The nest varies considerably; sometimes it is a fairly neat, though lightly built structure, the outside being of coarse grass or of the leaves of a wild cane (*Schizostadryum dumetorum*), very common on the hill-sides, lined with finer grasses: or it is sometimes made almost entirely of pine-needles and lined with the same. As a rule, it is placed in a bush at an elevation of two or three feet from the ground, but not infrequently it is found almost on the ground itself, and is never seen at a greater elevation than about six feet.

This bird is a close sitter and does not leave its eggs until one is almost on the top of the nest; it then flutters off without any demonstration and disappears at once into the scrub.

The usual clutch appears to be of four eggs, for there was never a case in which a less number was found to have been sat upon, and more were never seen.

This species is extremely popular with the Chinese as a cage-bird; but although it is not to be found elsewhere in the immediate neighbourhood of Hong Kong than in the island itself, the suggestion that it has been introduced by the escape of caged individuals seems hardly justifiable. It is merely an example of the extraordinary localization of certain species in this part of China. It is a resident at Macao, and was heard at Wuchau and in the gorges behind the Howlik Forest, but it is not at all common; it is obviously indigenous and not an escaped species.

Eggs vary in length from 1·09 to ·97 and in breadth from ·86 to ·78, and they average ·99 × ·83.

POMATORHINUS STRIDULUS.

Pomatorhinus ruficollis Hodgs.; Sharpe, Cat. B. M. vii. p. 426 pt.

This Babbler, though uncommon, is widely distributed; a pair was obtained up the North River on May 9th, 1905, and another pair near Wuchau on March 23rd, 1906; whilst others were seen, or obtained, at Howlik, Tam Chau, and elsewhere.

This bird is shy, keeping to the scrub and low bushes; probably it is resident, as it has been found from January until August, and there is not much doubt that it breeds in Kwang Tung.

DRYONASTES CHINENSIS.

The Chinese Babbling-Thrush is a regular but rather scarce winter visitor to Hong Kong, where it is seldom seen, owing to its extreme shyness and its partiality for the thickest parts of the woods. It was not observed elsewhere.

The song of this species is quite unmistakable from that of any other bird occurring at Hong Kong, and heard at a distance is very melodious, if a trifle monotonous, consisting as it does of a few flute-like notes repeated at short intervals. It was not heard before April 23rd, nor was the bird seen sooner than May 5th, when an opportunity of observing a pair evidently about to breed occurred. This pair of birds, engaged in amorous dalliance, permitted themselves to be watched at a distance of a few yards for about ten minutes, and probably had only recently arrived.

There is no doubt that this species breeds at Hong Kong, although its nests and eggs have not been satisfactorily identified there. Its characteristic song has been heard during April, May, June, and July; but after August it was silent. Although it is heard at all hours of the day, it prefers to sing before 8 A.M.

This species is a popular cage-bird with the Chinese, and the fanciers say that those they have for sale come from the Province of Kwang Si. The Hong Kong live-stock dealers call this bird "Shan Mo."

DRYONASTES PERSPICILLATUS.

This Babbling-Thrush is a common bird all over the district under discussion, and its loud clear whistle is a sound which when once heard in the woods of Hong Kong is not easily forgotten. They usually go about in small parties of from four to a dozen or a dozen and a half, and this arrangement seems to hold good even in the breeding-season.

It is said by Abbé David that this bird will attack and devour the young of other species, but this was not observed by the writers. It appears chiefly to live on insects.

The young birds remain with the parents, being fed by them until they are quite well grown.

The nest is frequently placed in a bamboo at a height of about twenty feet from the ground, but it has been noticed at not more than five or six feet. It is a well-made structure of dry grass, lined with finer grasses or even with pine-needles, and has a good deep cup.

The pale blue eggs are usually four in number, but three are sometimes sat upon.

Eggs may be found from early in March until August, so, no doubt, this species is doubled-brooded.

Eggs average 1·10 × ·83, and vary in length from 1·16 to 1·01, and in width from ·90 to ·80.

DRYONASTES SANNIO.

This Laughing-Thrush is a resident, but not a common one, and its extremely secretive habits and fondness for thick scrub in deep valleys and on steep hill-sides makes it far from easy of observation. It was observed at Tam Chau, where, in a ravine at the foot of the hill on which the monastery stands, two immature birds were obtained.

The bird is shot with difficulty, because it sticks to the undergrowth, and when flushed drops with closed wings after the shortest possible flight.

The call is like that of *Dryonastes perspicillatus*, but is more musical. A nest was found in a thorn-bush at Wu Shek, on the North River, which in architecture and materials exactly resembled that of *Dryonastes perspicillatus*. These birds also breed at Howlik, but no nests were discovered there.

Two eggs average 1·04 × ·76.

TIMELIA PILEATA.

The Red-headed Babbler is an uncommon resident at Tak Hing, forty miles below Wuchau, on the borders of Kwangsi and Kwang Tung, and is found nowhere else on the West River.

On May 3rd, 1907, a nest of this species containing four eggs was discovered in a ravine full of flags, the female bird flying to it and thus betraying the secret. This nest, which was about a foot from the ground and ill-concealed, was placed among rank herbage, and so loosely put together that it almost dropped to pieces when removed; it was domed and had an entrance-hole at one side.

PYCTORHIS SINENSIS.

The Orange-eyed Babbler is a rare resident on the West River and was most frequently observed at Tak Hing, but also at Tam Chau and Wuchau in Kwang Si.

Nests of this species were found on May 30th and August 3rd, and in both cases were placed against the main stem of a large reed, supported by several small twigs; they were easy to see. The one discovered on May 30th contained three young and an infertile egg.

The birds at the nest were noisy and aggressive, and frequently hung on to the reeds, upside down reminding one of the Bearded Tit.

The nest found on August 3rd was not completed, and was made entirely of dead reeds and bamboo-leaves, bound together by cobwebs and vegetable silk. It was small and had a deep cup.

Stachyridopsis sinensis.

Stachyridopsis sinensis O.-Grant, Ibis, 1907, p. 184.

Mr. J. C. Kershaw obtained an example of this species at Lok Yum, near Howlik, on April 11th, 1907, where in company with another it was threading its way quickly through the undergrowth. This specimen was a male with well-developed testes. Subsequently on May 1st, 1907, Mr. Kershaw saw a party of half a dozen of these birds near Howlik and shot one, but failed to pick it up among the thick undergrowth.

Alcippe hueti.

Alcippe nipalensis (Hodgs.); Sharpe, Cat. B. M. v. p. 620 pt.

This bird appears to be resident in Howlik Forest; it is very noisy, with several loud notes, one of which resembles a Tit's trill. In habits it rather resembles a Tailor-bird.

In the winter these birds go about in little parties, but by May they are paired, and nesting begins about the second week of that month.

A nest found on May 27th contained three fresh eggs; it was slung from the underside of a frond of fern on one side, and from some bamboo-grass on the other, and it was made of dead leaves and reed-blades, bound together with the black stems of bracken. The egg will be figured on Plate V. fig. 2 of the April number.

The nest was marvellously well concealed and very hard to find. It was discovered by Mr. J. C. Kershaw.

Liothrix lutea.

This bird was seen by Mr. J. C. Kershaw at Lo Fu Shan, about twenty miles from Canton, and it has been observed on two other occasions, once at Hong Kong in May and once at Kowloon in April. It is a common cage-bird at Hong Kong, and it is possible, though not likely, that the birds seen had escaped from captivity.

PARUS CINEREUS.

The Indian Grey Tit is a common resident species at Hong Kong and on the Kwang Tung coast, but away from the sea its place to the west and north is taken by what has been called *Parus commixtus.* The borders of their respective territories lie near Howlik, where the Delta and creek country comes to an end, and the hills begin. In this region the two interbreed, and were obtained on those terms of tender intimacy which are supposed to indicate *identity* of species.

This bird nests early and two broods are probably reared in the year. A party of young with their parents were seen as early as the first week of March, but eggs have not been taken before the 10th of that month. Second clutches are found during the first half of May.

Very large clutches are not found ; six or seven is usual for first, and five for second layings.

The nest exactly resembles that of *Parus major* and is placed in similar situations.

LANIUS SCHACH.

This handsome Red-backed Shrike is very common both up the West River and at Hong Kong and Macao, and is resident throughout this part of China.

The resident birds are largely augmented, however, by the arrival of migrants from the north in September, and these, after dawdling for a week or two, proceed further south again. At this time, in the Delta country, many of these Shrikes can be seen perched on the swaying reed-tops. The bird is very noisy, but less so in the autumn months than in the spring and summer. Perched on the top of a small tree or a large bush, it gives vent to a series of harsh guttural notes, which are peculiar and characteristic, without being pleasant to the ear.

At times in the spring this Shrike can produce a variety of notes almost amounting to a song, and it is also an admirable mimic. One individual was heard to imitate the Mynah, Grackle, Magpie, Francolin, and Black-headed Bulbul. The Francolin and Mynah are often imitated, and wonderfully well. The Francolin sometimes replies to the Shrike's challenge.

This Shrike does not keep a larder, though one was once observed to jab a small lizard on a spike of bamboo before eating it.

The nest is a deep well-made cup of coarse grass, often with a few flowering heads outside, lined with finer grasses. It may be placed in a variety of trees at elevations of from three to twenty feet or more. Up the West River evergreens and fruit-trees are favoured, and bamboos are used occasionally, but in Hong Kong the nest is often in a fir-tree.

The eggs are laid from about mid-April until well on in June, and there is little doubt that this species is double-brooded. Four or five is the usual clutch, but six have been obtained, and on one occasion a nest was found containing five eggs of the Shrike and one of the common Dove of the country.

As in the case of *L. collurio*, the eggs are of two varieties, a reddish and a greenish, and the former are much the rarer on the coast; out of forty eggs taken at Hong Kong only one was red. Up the West River the red phase predominates.

Eggs vary in length from 1·08 to ·91 and in width from ·81 to ·72, and average ·99 × ·75.

Lanius fuscatus.

The Black Shrike is much less common than *Lanius schach*. It is more abundant on the coast than up the river and has not been observed at all in Kwang Si Province. No less than five of these birds in various localities were watched, and for several years they never mated and were always found at the same places. At Hong Kong a pair was seen at Wan Chai Gap in June, but no nest was found.

In October 1902, at Crooked Island, Mirs Bay, this species was found to be abundant and a good many were obtained, including some immature birds.

This Shrike has the same fondness as *L. schach* for sitting on the top of a stake, bush, or tree and giving vent to what almost amounts to a song and to imitations of other birds. The notes are less harsh than those of *L. schach*. It feeds chiefly on the ground, picking up various insects.

On May 9th a Chinaman found six eggs which he declared to belong to this species, and as he knew exactly what he was looking for, he was probably right.

The eggs are like those of *L. schach* in point of size, but the ground-colour is white and the ashy-coloured markings are more scanty. They average ·92 × ·73.

LANIUS CRISTATUS.

These Shrikes pass through twice a year on migration, but do not linger on their passage; they are seen in April and early May and again in September. A young bird was obtained at Kowloon in February 1902 in bitterly cold weather.

LANIUS SUPERCILIOSUS.

This Shrike is an occasional spring and autumn migrant; it is seen in small numbers some years, and in others is not seen at all. On passage to and from its breeding-grounds its movements are quite leisurely.

LANIUS LUCIONENSIS.

The Philippine Shrike is resident in a few favoured localities, but chiefly occurs on passage in the spring and autumn, being especially noticeable at the former time of year.

April 11th is the earliest recorded date, and from that time onwards a few may be seen daily until May, when about the middle of that month immense numbers have been observed passing through Hong Kong.

As a breeding species this Shrike is confined to Shau Kwan on the North River, where it is fairly common, and to Tak Hing on the West River, where about three pairs breed. It is probably not double-brooded, and eggs may be found from the middle of May until June. Four or five is the usual clutch, but as many as seven have been found.

The nests in south-eastern China are always at a considerable elevation, from thirty to sixty feet, and are placed in fruit-trees and banyans, sometimes well hidden and sometimes quite conspicuous.

This bird has not been found to have a "larder" like *L. collurio.*

This region is perhaps the south-eastern limits of this bird's breeding-range, for it is known to nest in north-eastern China and on the Yangtze, so that it has a large north and south breeding range. The egg will be found figured on Plate V. fig. 18 of the April number.

LANIUS COLLURIOIDES.

At Tak Hing, on the borders of the two Kwang Provinces, two pairs of these birds were found nesting, and this species occurs also in Kwang Si, but is not common there.

On May 31st, at Tak Hing, a nest was found in course of construction and on June 19th it contained four eggs very highly incubated. This nest was in a small fir-tree against the trunk and about seven feet from the ground. It was made externally of flowering grass-heads, and was lined with fine grass-stalks. At the nest neither of the birds made any sound.

On June 3rd, Staff-Surgeon C. G. Cortis Stanford, R.N. took two single eggs from different nests. The eggs from the first nest mentioned above are larger than those of the other two.

At Tam Chau a pair of these birds was seen feeding three fully grown young on July 12th.

The two eggs mentioned above are of different types and measure ·76 × ·66 and ·82 × ·63 respectively, and in colour one is of a pale greenish white spotted all over, chiefly at the larger end, with pale ashy, purplish, and yellowish brown, whilst some spots are over-spotted with darker colour; the other has the ground-colour yellowish white, the markings as in the first case but collected at the smaller end and more confluent. The egg will be figured on Plate V. fig. 15 of the April number.

Lanius tigrinus.

At Wuchau and Samshui, a few of these birds were seen in April and May, and on one occasion an immature specimen was obtained at Kowloon in February.

At Tam Chau, Kwang Si, an immature bird was shot on August 14th; so perhaps they breed in the western Province.

Æthopyga latouchii.

Æthopyga latouchii Slater, Ibis, 1891, p. 43.

This handsome Sunbird occurs only in Howlik Forest and as a winter visitor. It has a peculiarly loud metallic note, and haunts the topmost boughs of very tall trees.

Zosterops simplex.

Zosterops palpebrosa (Temm.); Gadow, Cat. B. M. ix. p. 165 pt.

The Chinese White-eye is a very common resident, both on the coast and inland. It is usually to be observed in small parties throughout the summer months, and in the winter very often in considerable flocks; when in company they search diligently all day on and under the leaves of the banyan and other trees for their insect food to a loud and cheerful accompaniment of the notes "chee! chee"! When flying from one tree to another they also continually call "chee! chee!": but they appear to have no song.

These birds are greatly in favour with the Chinese as cage-birds; they take them from their nests whilst unable to fly, and having placed them in a cage hang it near the original nesting-site, so that the old birds come and feed their offspring until the latter are able to take care of themselves.

The first nests of this species at Hong Kong are built in the beginning of March, and as others continue to be made until August, there is no doubt that several broods are reared in a season.

The situation of the nest is frequently the outer end of a horizontal bough of a banyan-tree, where, slung underneath the finest twigs and surrounded by leaves, it is most difficult to see. It can also be found in various other trees, always well hidden and often at a considerable elevation. Small, beautifully made, quite round, and fairly deep, it is a charming structure, composed externally of fine grass or weeds, mixed with cotton, and lined with a variety of materials, such as very small pine-needles, horsehair, or the finest grasses and weeds.

The eggs vary from four to two in number, and are usually pale blue, but are sometimes quite white; they are a favourite article of diet with the Blue Magpie.

Eggs average ·63 × ·46, and vary in length from ·71 to ·55 and in width from ·44 to 50.

DICÆUM CRUENTATUM.

This Flowerpecker is a fairly common resident both on the coast and up the West River; but it is commoner on the coast and is not seen above Wuchau nor on the North River. These birds, in the winter time, are seen singly or in small parties, and their peculiar "chink" of a note calls attention to them at once. They hunt for insects, frequently at the tops of very high trees, and are so rapid in their movements that they are difficult to see. In addition to the loud "chink," the male of this species has a feeble little song.

These birds pair in February, and their nests have been found at various dates from June 17th to August 19th.

They are usually placed at the end of a branch and high up; the earlier ones are made of strips of very fine bark or fibre, matted together with cobwebs, but those built later on are often composed of the cotton of the bombax tree, and being white in colour are fairly easy to see.

The nest is a pear-shaped structure, about four inches in depth, with an entrance-hole about halfway down one side, which is seven-eighths of an inch in diameter and wrapped round with cobwebs. Only one egg was obtained; the nests usually contained young.

On June 17th a female of this species was seen building a nest, and she apparently did so unaided by the male. She was carrying little pieces of fibre to the nest, and so quickly did she insert each portion that it looked exactly as if she were carrying insects to feed her young ones with.

DICÆUM INORNATUM.

This Flowerpecker, the smallest bird in south-eastern China, is a fairly common resident at Tam Chau and near Howlik, but does not occur on the coast.

These birds have very loud voices and their notes at once call attention to them, although from their habit of hunting round the tops of the highest trees and their small size they are most difficult to see.

Probably this species breeds in April, judging by the highly developed testes of the males in that month. All endeavours to discover the nest failed.

MYZANTHE IGNIPECTUS.

Dicæum ignipectus (Hodgs.); Sharpe, Cat. B. M. x. p. 41.

On February 8th a male of this species with highly developed testes was obtained in the Garden of the British Yamen in the centre of Canton City. There was another bird with it, which may have been its mate.

This little bird has a note resembling that of *Dicæum cruentatum*, but it also possesses an additional little trill. In other habits this species resembles *Dicæum*.

Two pairs of these birds were breeding at a place near

Howlik, but the cover is dense and the trees are very lofty, and the nests could not be located.

On June 8th it was heard at Macao and on the 12th at Wing On, twelve miles from Samshui, so that it is fairly well distributed.

CHELIDON LAGOPUS.

On March 16th, 1907, in the Happy Valley at Hong Kong, large numbers of the House-Martin were seen in company with *Hirundo gutturalis*. This is the only occasion on which these birds were seen at Hong Kong.

It is difficult to explain these unusual irruptions of birds, but perhaps the dense fog, so common at Hong Kong in the spring, or the encountering of a typhoon, may well cause a species on migration to change its usual course or to come down to earth when under normal conditions it would not do so.

COTILE RIPARIA.

Sand-Martins occur both on the West and North Rivers on their spring and autumn passages, but in spite of many apparently very suitable localities they never stay to breed. They are often in company with *Hirundo gutturalis* and sometimes with *Hirundo striolata*. They pass on their way north in April and May, and on the return journey from early in September until the end of October.

Cotile sinensis was never obtained, though carefully looked for.

HIRUNDO GUTTURALIS.

Eastern Swallows appear at Hong Kong about the 8th or 10th of February, as a rule. They leave again in the first or second week of August.

These Swallows nest, as a rule, under the eaves of native houses, and as they are believed to bring good luck are carefully protected by the Chinese at Hong Kong, but inland apparently the Celestial idea is that they are unlucky.

These birds are double-brooded; the earliest eggs were taken in March, while second clutches are laid in June.

At Hong Kong, although the birds which breed locally leave in August, an occasional flight has been seen in November, and after a severe typhoon in September numbers were observed flying aimlessly about the Naval Hospital.

The usual clutch of eggs is five or occasionally six, and they vary in length from ·74 to ·65 and in breadth from ·54 to ·49, and average ·70 × ·52.

The eggs do not differ from those of the common European Swallow in colour and markings.

HIRUNDO STRIOLATA.

The Mosque-Swallow is a very common summer visitor to some parts of the West River, but in the eastern part is only found breeding under the curiously carved eaves of the temples of the monastery at Howlik at an elevation of 1500 feet above the sea.

In Kwang Si Province, however, this species takes the place of *Hirundo gutturalis* and breeds at lower levels.

At Howlik it was observed that only about one bird in ten made the retort-shaped nest, supposed to be so characteristic of this species, and whilst some were quite open, like those of the House-Swallow, others resembled those of the House-Martin in being closed above. The nests are lined with grass and a few feathers, but the first egg is often laid on the clay of the outer wall and a lining added during incubation.

There are at Howlik small boards, placed under the birds' nests, to prevent their droppings from falling on the monks as they pass beneath.

It is thought that sometimes pairing takes place inside the nests, which are very spacious. The monks consider these birds to be sacred; but although they protect them from the Chinese, they made no attempt to do so from Europeans.

The usual number of eggs is three or four, but occasionally five are found.

The eggs are white and without much gloss; in some rare cases a few faint reddish spots are to be noticed at the larger end. The birds are double-brooded.

The Mosque-Swallows usually arrive in large flocks early in March, but a few have been seen as early as January. They leave again between the middle of September and the end of October, but some linger on into November and December, the latest date being the 22nd of the last-named month.

Possibly these very late birds are those which have nested only a little further north. Prior to migration they settle in vast numbers on telegraph-wires and other suitable perching-places in the same manner as the other Swallows.

Building begins at the end of April, and nests containing eggs in all stages of incubation, and in a few cases young birds, were found on June 3rd.

Eggs vary in length from ·85 to ·69 and in breadth from ·62 to ·58 ; they average ·77 × ·60.

[To be continued.]

V.—*Notes on the Birds collected by the B.O.U. Expedition to Dutch New Guinea.* By W. R. Ogilvie-Grant, F.Z.S., M.B.O.U.

The following account of the birds brought home from New Guinea by the B.O.U. Expedition has been reprinted, by the kind permission of Messrs. Smith, Elder & Co., from the Appendix A to Mr. A. F. R. Wollaston's volume, 'Pygmies and Papuans,' which contains the official account of the Expedition. As it was thought that this account might not come under the notice of all the Members of the Union, it has been considered advisable by the Editor to reproduce it in the 'Ibis' with a few additional notes and slight alterations. When Mr. Wollaston, who is accompanied by Mr. C. Boden Kloss and five trained Dyaks, returns with large additional collections from the second Expedition, it is intended to draw up a complete account of the birds for the information of the Members of the B. O. U. and the other subscribers towards the expenses of the Expedition.

Our knowledge of the Birds of New Guinea is based mainly on Count T. Salvadori's monumental work 'Ornitologia della Papuasia e delle Molluche,' which appeared in three large volumes in 1880–82, and on his 'Aggiunte' to the above work published in three parts in 1889–91. Since that date our knowledge of the avifauna has vastly increased, and a very large number of splendid Birds-of-Paradise and other remarkable new species have been discovered.

A list of the principal works subsequently published, placed in chronological order, will be found at the end of this article, the most important papers being no doubt those by the Hon. Walter Rothschild and Dr. E. Hartert, which have appeared from time to time in the Tring Museum periodical, 'Novitates Zoologicæ.' Mr. Rothschild is to be congratulated on the success which has attended the efforts of his various collectors in New Guinea, and on the energy which he has displayed in obtaining birds from the unknown districts of the most interesting island in the world.

To give in a single chapter a brief and partly scientific, partly popular, summary of the ornithological work accomplished by our Expedition in Dutch New Guinea is a more difficult task than might be imagined, for there is not only an immense number of species to be dealt with, but in most instances very little is known about their habits. The jungles of South-western New Guinea are so dense that white men can scarcely traverse them, and most of the collecting had to be done by the trained natives from the Malay Peninsula, kindly supplied by Mr. H. C. Robinson, and by the Gurkhas who accompanied the Expedition.

By dealing with each family in turn, I shall endeavour to refer to all the more important species in the collection in their proper scientific order, briefly describing some of the more beautiful, so that those without any special knowledge of birds may, if they care to do so, form some idea of the marvellous types which have been brought home from the interior of South-western New Guinea.

It is certain that the resources of that wonderful island are not nearly exhausted: on the contrary, every fresh collecting expedition sent to the interior produces remarkable novelties, and large chains of high mountains are still unexplored. The members of our Expedition were fortunate in procuring no less than 2200 skins of birds in New Guinea, representing about 235 species, of which ten proved to be new to science. A number of new birds were also obtained by the late Mr. Wilfred Stalker in the mountains of Ceram, which he visited before joining the main Expedition at Amboina. His premature death by drowning, a few days after he landed in New Guinea, was an immense loss to the Expedition, though his place was ably filled by Mr. Claude Grant, who worked with his characteristic zeal and enthusiasm.

It will be noticed that the great bulk of the birds inhabiting New Guinea belong to a comparatively small number of families, but that each of these is represented by a large number of different species, especially in such groups as the Pigeons, Parrots, Flycatchers, and Honey-eaters.

Amongst the Pigeons, of which no fewer than twenty-seven different kinds were obtained, it would seem as though, in some instances at least, Nature had almost come to the end of her resources in devising new and wonderful arrangements of colour and markings; for in some of the smaller Fruit-Pigeons, such as *Ptilopus gestroi* and *P. zonurus*, we find two perfectly distinct species, occurring side by side, possessing almost exactly the same remarkable scheme of coloration, and only differing in certain minor points to be found in the markings of the wing-coverts. Another very similar instance is to be seen in *Ptilopus coronulatus* and *P. nanus*, almost the same colours and pattern being repeated in both.

The collection obtained by our Expedition is a very valuable one, and has added many new and interesting forms of bird-life to the incomparable series in the Natural History Museum, to which the bulk of the specimens have been presented by the subscribers. A large proportion of the birds were obtained at low elevations from sea-level to 2000 feet, only a comparatively small number being procured at from 3000–4000 feet. It is to be regretted that the immense physical difficulties encountered and other causes prevented our collectors from reaching a higher zone between 5000 and 10,000 feet, where no doubt much of interest remains to be discovered by those who are fortunate enough to get there.

TABLE SHOWING THE NUMBER OF SPECIES REPRESENTED AND THE FAMILIES TO WHICH THEY BELONG.

Family.		No. of Species.
Corvidæ	Crows	2
Paradiseidæ	Birds-of-Paradise, Bower-Birds, and Manucodes	13
Eulabetidæ	Tree-Starlings	4
Dicruridæ	Drongos	2
Oriolidæ	Orioles	1
Ploceidæ	Weaver-Finches	1
Motacillidæ	Wagtails	2
Meliphagidæ	Honey-eaters	26
Nectariniidæ	Sun-birds	2
Dicæidæ	Flower-peckers	2
Zosteropidæ	White-eyes	1
Laniidæ	Shrikes	8
Prionopidæ	Wood-Shrikes	4
Artamidæ	Swallow-Shrikes	1
Timeliidæ	Babblers	4
Campophagidæ	Cuckoo-Shrikes	11
Muscicapidæ	Flycatchers	30
Hirundinidæ	Swallows	2
Pittidæ	Pittas or Ant-Thrushes	2
Cuculidæ	Cuckoos	11
Cypselidæ	Swifts	4
Caprimulgidæ	Nightjars	2
Podargidæ	Frog-mouths	3
Bucerotidæ	Hornbills	1
Meropidæ	Bee-eaters	1
Coraciidæ	Rollers	2

Family.		No. of Species.
Alcedinidæ	Kingfishers	11
Psittacidæ	Parrots	22
Loriidæ	Lories or Brush-tongued Parrots	
Bubonidæ	Horned and Wood-Owls	1
Falconidæ	Eagles and Hawks	7
Phalacrocoracidæ	Cormorants	1
Anatidæ	Ducks	2
Ibididæ	Ibises	1
Ardeidæ	Herons	4
Œdicnemidæ	Stone-Plovers	1
Charadriidæ	Plovers	8
Laridæ	Gulls and Terns	2
Rallidæ	Rails	1
Columbidæ	Pigeons	26
Megapodiidæ	Megapodes or Mound-builders	3
Casuariidæ	Cassowaries	3
	Total	235

From this table it will be seen that out of 235 species procured, 150 are included in eight of the families: viz. Birds-of-Paradise, 13; Honey-eaters, 26; Cuckoo-Shrikes, 11; Flycatchers, 30; Cuckoos, 11; Kingfishers, 11; Parrots, 22; Pigeons, 26.

Family CORVIDÆ—*Crows.*

Though the true Crows are never brightly coloured birds, many are extremely handsome, but this epithet cannot be applied to the Bare-faced Crow (*Gymnocorax senex*), which is common on the Mimika River and distributed over New Guinea generally.

The adult is brownish-black with a slight purplish or bluish gloss on the wings, but is generally in worn and shabby plumage. Even when freshly moulted it is rather a disreputable-looking bird, its naked pink face, pale watery blue eyes, slate-coloured bill, and livid feet adding to its dissipated appearance. Young birds in their first year's plumage are even plainer than their parents, being dull drab-brown inclining to brownish-white on the head and neck. They have a weak uncrow-like call pitched in a high key, and their flight is feeble and seldom sustained.

In addition to this Crow of unprepossessing appearance, there is a handsome Raven (*Corvus orru*), much like our familiar bird but smaller, which was met with in pairs on the coast.

Family PARADISEIDÆ—*Birds-of-Paradise and Bower-Birds.*

Closely allied to the well-known Greater Bird-of-Paradise (*Paradisea apoda*) from the Aru Islands is the New Guinea form *P. novæ-guineæ*, the males being distinguished by their smaller size and by having the long ornamental side-plumes of a much richer orange-yellow. Though the call of this bird was frequently heard on the upper parts of the Mimika, it was rarely seen; but on the Wataikwa quite a number were procured in all stages of plumage. The species was, however, nowhere plentiful and is confined to the foot-hills.

The Pygmies often brought plumes of the Lesser Bird-of-Paradise (*P. minor*) to Parimau and traded them with the natives, but the species was not found on the Mimika, the Charles Louis Mountains probably forming its southern boundary.

My account of the display of that species, as witnessed in the Zoological Society's Gardens, Regent's Park, will be found in 'The Ibis,' 1905, p. 429, accompanied by various drawings and a coloured plate by Mr. G. E. Lodge. The display resembles that of the Greater Bird-of-Paradise (*P. apoda*) and the Red Bird-of-Paradise (*P. raggiana*), and no doubt also that of *P. novæ-guineæ*. It is a wonderful and beautiful sight to see these birds erect their splendid side-plumes in an arch over the back, which is concealed in a shivering cascade of colour, orange and white, or red according to the species.

Numbers of the beautiful little King Bird-of-Paradise (*Cicinnurus regius*) were brought home in all stages of plumage from the young to the fully adult male, with its scarlet head, shading into glittering carmine on the back and wings and into purplish-carmine on the throat, which is bordered below by a rich dark green band. The sides of the chest are ornamented with fan-like arrangements of grey feathers tipped with glittering golden-green; the breast and the rest of the underparts are of the purest white: the outer tail-feathers are earthy-brown edged with orange-red, while the middle pair, which cross one another, have the bare shafts enormously lengthened, and terminate in a tightly curled disc, golden-green above and reddish-brown beneath.

These beautiful ornaments are seen to the greatest advantage when the King is displaying, the green-tipped fan-like feathers on the sides and the white feathers of the breast being spread out to form a circular shield in front of the bird, while the green metallic discs of the long middle tail-feathers are erected and waved overhead. An excellent description of the display of this species is given by Sir William Ingram in 'The Ibis,' 1907, p. 225, with a coloured plate and figures drawn by Mr. G. E. Lodge from a living specimen.

Mr. Walter Goodfellow made an interesting observation on the habits of this species. While watching some Pigeons on the opposite bank of the river through his glasses he saw a small bird rise from the top of a tree and soar into the air like a Sky-Lark. After it had risen about thirty feet, it suddenly seemed to collapse, and dropped back into the tree as though it had been shot. It proved to be a King Bird-of-Paradise, and probably this soaring habit is a part of the display not indulged in by captive birds confined in comparatively small cages.

A Rifle-Bird (*Ptilorhis magnifica*) was fairly common, both on the coast and near the mountains, and its call, consisting of two long-drawn notes—one ascending, the other descending,—might be heard at all hours of the day. Its plumage is mostly velvety black on the head and upper-parts, but the crown, middle of the throat and chest, as well as the middle pair of tail-feathers, are metallic blue, and a bronze-green band separates the chest from the deep purplish-maroon under-parts. The outer flight-feathers are curiously pointed and strongly falcate, and some of the side-feathers terminate in long, narrow, decomposed plumes. The long, curved bill and the legs are black, while the inside of the mouth is pale apple-green, as is the case with several other species of Paradise-Birds.

Though a well-known species, we must not omit to mention the splendid Twelve-wired Bird-of-Paradise (*Seleucides niger*). The plumage of the male is like dark brown plush, shot with bronze-green on the back and deep violet on the wings, while the long dark breast-feathers are edged with rich metallic emerald-green. The long ornamental side-plumes and the rest of the under-parts are of a beautiful bright cinnamon-yellow when freshly moulted, but this colour is so volatile that it fades to nearly white in skins which have been kept for a few years. The shafts of six of the long side-plumes on either side extend far beyond the vane of the feather and look like twelve recurved wires, hence the bird's popular name. The eye is crimson, the bill black, the gape bright apple-green, and the legs and toes yellowish flesh-colour.

The Expedition procured three examples of a new form of *Parotia* or Six-plumed Paradise-Bird on the Iwaka River, but unfortunately did not succeed in shooting a fully adult male. Simultaneously A. S. Meek, who was collecting for Mr. Rothschild, procured specimens of the same bird on the Oetakwa River a few miles to the east, but he likewise did not secure the fully adult male. The species has been named *Parotia carolæ meeki* by Mr. Rothschild *.

The plumage of this bird is like brownish-black plush and equally soft to the touch. The head is ornamented very wonderfully; on either side behind the eye there are three long racket-like plumes on long bare shafts (a character common to all the members of this remarakble genus of Paradise-Birds): the middle of the crown is of a beautiful "old" gold colour in a setting of silvery-white and golden-brown: on the occiput there is a marvellous patch of stiff metal-like feathers, golden-green bordered with deep violet; the sides of the head before and behind the eye are golden-brown, the chin and upper part of the throat deep brown, and the lower part whitish spotted with rufous. A lovely metallic breast-plate of bronze-green and violet feathers with dark middles covers the chest, and the long flank-feathers are white. The two outer flight-feathers are curiously attenuated near the extremity, and terminate in a sharp point, the shaft bearing only a very narrow web. No doubt all these ornaments are displayed in a similar manner to those of *P. lawesi* from British New Guinea, males of which have been living for some years in the Zoological Society's Gardens, Regent's Park.

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* On his second trip Mr. Meek procured adult male examples. *Cf.* Bull. B. O. C. xxix. p. 118 (1912).

Another very handsome species is the Golden-winged *Diphyllodes chrysoptera*. The male has the bill and a bare space behind the eye bluish-white, the inside of the mouth apple-green, and the feet Prussian-blue. The head is clad in short velvety reddish-brown feathers with two metallic-green spots between the eyes; the nape bears a frill of rather long brown-tipped plumes; the mantle is light golden-yellow like spun glass, and forms a lengthened tippet; the inner secondary-quills and shoulder-feathers are orange-yellow, and the back carmine and dull orange shading into sooty black on the upper tail-coverts. The throat is deep velvety brown, the neck and breast rich dark green bordered below with metallic bluish-green, and with a row of metallic-green bars like steps down the middle of the neck and chest; the rest of the under-parts are black. The short outer tail-feathers are sooty brown, while the middle pair, which cross one another, are very long and narrow and of a metallic-bluish-green. The female is very soberly clad, dull brown above and narrowly barred with brown and buff below.

The Bower-Birds have received their name from their peculiar habit of constructing bowers or runs where the males meet to play or to pay their court to the females. The bowers are built long before the birds begin to build their nests, which are placed in trees.

One of the most noteworthy species procured by the Expedition was the gorgeously coloured Bower-Bird, *Xanthomelus ardens* [O.-Grant, Bull. B. O. C. xxvii. p. 66 (1911)]. The male has the eye yellow and the head, sides of the neck, and mantle orange-scarlet, the feathers of the latter being very long and loose and forming a dense cape; the rest of the plumage is orange-yellow above and golden-yellow below: the ends of the quills and the tail-feathers being black.

The female has the iris brown and is more sombrely clad, the head and upper-parts, including the wings and tail, being earthy-brown, while the under-parts, under wing-coverts, and wing-lining are yellow, like those of the male, but less bright.

This beautiful species was originally described from an imperfect native-made skin, obtained by the Italian naturalist, D'Albertis, on the Fly River. Subsequently Dr. H. A. Lorentz shot two adult males on the Noord River, which were described and figured by Dr. Van Oort. Our expedition was fortunate enough to secure not only adult males, but also the immature male and adult female, these latter being hitherto unknown.

The display of the male bird must be a very beautiful sight, his scarlet cape being no doubt erected and forming a great hood over the head.

Among the Bower-Birds, one of the most interesting was a remarkable female example of a species of *Chlamydodera* procured on the Kamura River. Unlike any of the allied forms, it has the under-surface washed with yellow, and appears to be the female of *C. lauterbachi*, of which the brilliantly coloured male was described and figured by Dr. Reichenow from an example procured in German New Guinea [*cf.* Orn. Monatsb. v. p. 24 (1897); & Journ. für Orn. 1897, p. 215, pl. vi.].

The male has the crown and sides of the face golden-orange, the upper-parts olive-brown, edged with yellowish, and the under-parts bright yellow. It is a very striking bird, and much the most brightly coloured member of the genus.

Though the two specimens were obtained in localities so far apart, there seems to be no reason why they should not be male and female of the same species. The female obtained by the Expedition possesses many characteristics in common with the male type of *C. lauterbachi,* and the differences in plumage are just what one would expect to find in the female of that species.

The beautiful Cat-bird (*Ælurœdus stonei*) was fairly plentiful, and is remarkable on account of its peculiar colouring. The cap is brown, the back grass-green, and the neck and under-parts buff, spotted with black, or green on the longer flank-feathers. The eye is hazel and the bill and legs slate-blue. The sexes are alike in plumage. It derives its popular name from its peculiar hissing alarm-note, not unlike the sound made by an angry cat.

Of the Manucodes, four different kinds were met with. They are all Crow-like birds with brilliant metallic-black plumage glossed with purple, green, or blue, and form a link between the Paradise-Birds and the true Crows. The Purple-and-Violet Manucode (*Phonygama jamesi*) is distinguished by possessing tufts of long, narrow, metallic-green plumes behind the eye, and by having the neck-feathers similarly lengthened; while the other three belonging to the genus *Manucodia* have the head and neck covered with short curly feathers. These curly-headed species are much alike in general appearance, but *M. orientalis* has the short curly feathers on the chest and breast glittering golden-green, while in *M. jobiensis* and *M. altera* the same parts are dark steel-blue. *Inter se* the two latter kinds differ considerably, both structurally and in colour. *M. jobiensis* is smaller and has the feathers of the throat rounded and crinkled. and the upper-parts glossed with a strong shade of violet; while *M. altera* is larger and has the throat-feathers short but rather pointed, and the general colour above purplish-blue or steel-blue.

In most of the Manucodes the trachea is very long and convoluted, that of the Purple-and-Violet species possessing no fewer than twelve coils which lie between the skin and the pectoral muscles. In spite of this marvellous instrument its cries are not nearly so loud as those of the Birds-of-Paradise of the genus *Paradisea.*

Mr. Claude Grant discovered a nest of *M. altera* with two eggs at Parimau, an interesting find, as no properly authenticated eggs of that species had previously been obtained.

Family EULABETIDÆ—*Tree-Starlings.*

Among the smaller Glossy Starlings we must specially mention a new species, *Calornis mystacea* [O.-Grant, Bull. B. O. C. xxix. p. 28 (1911)], discovered by the Expedition. It has the plumage purplish-bronze and is especially remarkable in having long semi-erect plumes on the forehead as well as long neck-hackles. Three specimens were obtained flying in company with large flocks of *C. metallica*, a rather widely distributed species, which ranges to North Australia, the Moluccas, and the Solomon Islands.

The Grackles or Talking-Starlings are represented by two lovely species, the first being the well-known Dumont's Grackle (*Mino dumonti*), a dark glossy greenish-black bird with a yellow belly and white under tail-coverts. It has a brown eye surrounded by a large naked orange patch partially covered with short stiff filaments. The second species, Robertson's Golden Grackle (*Melanopyrrhus robertsoni*), is an equally handsome, but much rarer bird, and the fine series of adults obtained by the Expedition proves that it is a species quite distinct from *M. orientalis*, the form found in British New Guinea, which has a large black patch on the occiput.

Robertson's Grackle has the cheeks and upper part of the throat, as well as the back, wings and breast, black glossed with green; the rest of the head, neck and chest, as well as the lower back, rump, upper tail-coverts and belly, are orange-yellow. In the adult there is no trace of a black patch on the occiput, but the quite young bird has the entire crown black, and specimens which have not assumed the fully adult plumage and still retain some black feathers on the occiput might be mistaken for *M. orientalis.*

That they have been so mistaken is proved by the fact that Count Salvadori and many others have regarded *M. robertsoni* Sharpe as a synonym of *M. orientalis* Schlegel, but they are really quite distinct species.

A few high trees left standing near the huts at Wakatimi were the resort, morning and evening, of these Starlings and various other species of birds. For a long time during the hot mid-day hours Mr. Goodfellow had observed that some bird, possessing a remarkably sweet Thrush-like song, rested there, and, after many days of watching, he found it to be Robertson's Golden Grackle. He says that the notes of this Starling would not pass unnoticed, even in countries where the birds, as a rule, have sweeter voices than those inhabiting New Guinea.

Family Dicruridæ—*Drongos.*

The Drongos, small Crow-like Flycatchers with pugnacious habits, are represented in the collection by two species—*Chibia carbonaria* and *Chætorhynchus papuensis.*

Family Oriolidæ—*Orioles.*

The Orioles are represented by one species only, *Mimeta striata,* belonging to the dull coloured brown-backed group with heavily streaked under-parts and the sexes alike in plumage. It was commonest in the mangrove-swamps near the coast.

Family Ploceidæ—*Weaver-birds.*

This widely distributed group is not very numerous in New Guinea, and the only representative met with was a small species, *Munia tristissima,* which was common in the clearing round the camp at Wakatimi.

Family Motacillidæ—*Wagtails.*

The Grey Wagtail (*Motacilla melanope*) and the Blue-headed Wagtail (*M. flava*) were both met with on the Mimika and other rivers. It is interesting to note that both species are included in the British List, the former being a regular breeding-species in our islands. The birds wintering in far-off New Guinea no doubt formed part of the eastern colonies of these species which nest in Siberia and visit the Indo-Malayan Islands in winter.

Family MELIPHAGIDÆ—*Honey-eaters.*

The Honey-eaters are very numerously represented in South-western New Guinea, and no fewer than twenty-seven species were met with by our Expedition.

The family is divided into two sections, the first including the comparatively brightly coloured genus *Myzomela*, the members of which resemble true Sun-birds (*Nectariniidæ*) in general appearance. Seven species were met with, the most brilliantly coloured being *M. cruentata*, which has the plumage of the body scarlet and the wings washed with the same colour; another species, *M. obscura*, has the entire plumage smoky-grey; and four forms are intermediate between these two types of coloration, being partly scarlet and partly grey. The seventh is a very small and very rare species (*Œdistoma pygmæum*), which was described by Count Salvadori from the Arfak Peninsula.

The other section contains a number of larger species, mostly with dull greenish or brownish plumage, and nearly all with a yellow tuft or patch on the ear-coverts. Though rather uninteresting-looking birds several are really of great scientific value, being new to the National Collection, and one, *Ptilotis mimikæ* [O.-Grant, Bull. B. O. C. xxix. p. 27 (1911)], has proved to be new to Science. The largest form is the curious Friar-bird (*Philemon novæ-guineæ*), with the bare sides of the face and neck black and a swollen knob on the base of the bill. It was generally met with in pairs, and inhabited the tops of the tallest forest-trees, whence its peculiar cry might constantly be heard.

Family NECTARINIIDÆ—*Sun-birds.*

The Sun-birds are represented by two species, *Cinnyris aspasiæ* and *C. frenata*. The male of the former is deep black with a dark metallic-green cap, shoulders and lower back, and purple throat; while the female is olive above and dull yellow below, with a grey head and throat. The latter species is dull yellow above, brilliant yellow below, with a purple throat in the male, which is absent in the female.

Mr. Goodfellow tells us that among the riot of parasitic plants which covered the trees a few Sun-birds and Honey-eaters might always be seen. The nests of the former, suspended from fallen and partially submerged dead trees, were continuously swinging from side to side, the strong current in the river keeping the trees in perpetual motion. These nests might easily be mistaken for a handful of drift left there by the river.

Family DICÆIDÆ—*Flower-peckers.*

Dicæum diversum and *Melanocharis chloroptera,* a dull-looking greenish-grey species described by Count Salvadori, were the only Flower-peckers met with. They are small Tit-like birds allied to the Sun-birds, but with a short bill serrated along the edges of the mandibles. Both species were very common everywhere, except on the coast, and were extremely tame.

Family ZOSTEROPIDÆ—*White-eyes.*

Zosterops chrysolæma, a beautiful little species with the upper-parts golden-olive, the throat and under tail-coverts yellow, and the breast and belly pure white, was the only species met with of this most numerous and widely distributed group. The popular name White-eye is derived from the ring of tiny white plumes which encircles the eye in all. They resemble Titmice both in their mode of life and notes. The only pair observed was met with on the Iwaka River, and the species is probably more numerous in the higher parts of the mountains.

Family LANIIDÆ—*Shrikes.*

The large Shrike-like birds with powerful hooked bills known as the Piping-Crows are represented by two members of the genus *Cracticus*: *C. cassicus,* a black and white species, and *C. quoyi,* with uniform black plumage. Both are much like their well-known Australian representatives, but smaller. *C. cassicus* was much the commoner bird, and was generally observed feeding on berries and fruits in high trees, its actions being very Crow-like.

The Pachycephaline group of birds allied to the true Shrikes is represented by half-a-dozen species, two of which proved to be undescribed: a grey form with a white throat, *Pachycephala approximans,* and a black species with a white breast and belly, *P. dorsalis* [O.-Grant, Bull. B. O. C. xxix. p. 26 (1911)]. Brilliantly coloured orange-yellow and black, or orange-yellow and grey, species are represented by *Pachycephala aurea* and *Pachychare flavogrisea.*

Family PRIONOPIDÆ—*Wood-Shrikes.*

This group is represented by *Rhectes cristatus* and *R. ferrugineus* in which both sexes are rufous, and by *R. nigripectus* with the sexes different, the male being partly black and partly chestnut. *Pinarolestes megarhynchus,* an allied species with the sexes alike, is brown above and dull rufous below. Some of these Wood-Shrikes lay peculiar-looking eggs of a long oval shape and large for the size of the bird. The ground-colour is purplish- or pinkish-grey with scattered spots or small blotches of dark purplish-brown or maroon-brown, often blurred at the edges and running into the ground-colour. These eggs have on several occasions been palmed off on travellers in British New Guinea as eggs of the Red Bird-of-Paradise, which they do not in any way resemble.

Family ARTAMIDÆ—*Swallow-Shrikes.*

These birds, which closely resemble Swallows in their mode of life, are represented by one species only, *Artamus leucopygialis,* a grey bird with the breast and rump white. It was common along the coast, and was generally seen either perched on some dead tree or skimming swiftly over the sands.

Family TIMELIIDÆ—*Babblers.*

We now come to the Timeline group of birds: of these we may mention two striking-looking species of *Eupetes*. One, *E. nigricrissus*, with the plumage slate-blue and the throat white, edged with black, was met with on the Mimika; the other, *E. pulcher*, was only seen further east on the Wataikwa River. It is very similar to the first-named, but has the crown and back rich chestnut, instead of slate. Both species are ground-birds and usually found in pairs; they are rather difficult to procure, as, when disturbed, they instantly conceal themselves among the trunks of the trees and vegetation. The Scimitar-Babblers were represented by the reddish-brown *Pomatorhinus isidori*.

Family CAMPOPHAGIDÆ—*Cuckoo-Shrikes.*

The Cuckoo-Shrikes are well represented in the collection, examples of no fewer than eleven species having been obtained. They belong to four genera and vary much in colour: the large *Graucalus cæruleogrisea* has the entire plumage bluish-grey, except the axillaries and under wing-coverts which are pale cinnamon, and the male has a black patch in front of the eye. Another genus, *Edoliisoma*, is represented by *E. melan*, of which the male is entirely black, and the female chestnut and brown. A very attractive and brilliantly coloured species is *Campochæra sloetii*, forming a marked contrast to other members of the group. The greater part of its plumage is orange-yellow, the forehead white, the middle of the crown yellow, and the wings black and white; the male has the cheeks, throat, and chest black glossed with dull green, while in the female these parts are dull grey. Several examples of this very rare Cuckoo-Shrike were procured on the Mimika River. It is no doubt most nearly allied to the Minivets (*Pericrocotus*), which inhabit the Indo-Chinese countries and islands, the predominant colour of most of the males being scarlet and that of the females yellow.

Family Muscicapidæ—*Flycatchers.*

Flycatchers are very numerously represented, and among them two new forms were discovered, a Fan-tailed Flycatcher (*Rhipidura streptophora*) [O.-Grant, Bull. B. O. C. xxix. p. 25 (1911)] and a broad-billed species, *Myiagra mimikæ* (O.-Grant, *ibid.* p. 26). Among the more notable forms we may mention *Monarcha aruensis*, a brilliant yellow and black species; *Todopsis bonapartei*, the male being vivid ultramarine-blue, purple, and black, while the female differs in having the back and sides dark chestnut and the breast mostly white; lastly, *Peltops blainvillei*, a black bird with the rump, vent, and tail-coverts scarlet, a large white patch on each side of the head and another on the middle of the mantle; the sexes are alike in plumage.

The Fan-tailed Flycatchers were commonly seen on the Mimika River in May and June, when numbers were busy hawking the canary-coloured May-flies which swarmed at that time.

The Black-and-White Flycatcher (*Malurus alboscapulatus*) frequented the tall grasses near the camp on the Wataikwa River. It was a delightful little bird, very tame, and might constantly be seen crossing the open spaces with an undulating flight.

Family Hirundinidæ—*Swallows.*

Two species of Swallows were met with, *Hirundo javanica* and *H. gutturalis*.

Family Pittidæ—*Pittas or Ant-Thrushes.*

Of the Ant-Thrushes or Pittas two species were obtained, both brilliantly plumaged birds. *Pitta mackloti*, which was far the commoner of the two, has a dark crown, reddish-chestnut nape, and greenish-blue upper-parts; the throat is black, the chest shining greyish-blue, and the breast and belly scarlet, divided from the chest by a wide black band.

The other species, *Pitta novæ-guineæ*, which was much less frequently met with, has the head and neck black and the rest of the plumage dark green washed with bluish on the breast, which is black down the middle. The shoulders are shining silvery-blue and the vent and under tail-coverts scarlet.

These long-legged Thrush-like birds are entirely terrestrial in their habits and frequent the depths of the forests. They can hop with great agility, and escape on the slightest alarm, but are easily taken in snares.

Family Cuculidæ—*Cuckoos.*

Among the Cuckoos, the largest is a species of "Crow-Pheasant" or "Lark-heeled" Cuckoo, *Centropus menebiki*, a bird of black plumage glossed with dark green, with a large whitish-horn bill and heavy slate-coloured legs and toes.

An allied, but smaller and rarer species, *C. bernsteini*, was met with near the mouth of the Mimika. It is very similar in plumage but is easily distinguished by its smaller size, black bill, and long, nearly straight hind-claw. Both are almost entirely ground-birds of skulking habits. Several other species of Cuckoo were met with, and among these *Cuculus micropterus*, the eastern form of the Common Cuckoo, closely resembling our familiar bird. The rarest species obtained was *Microdynamis parva*, a remarkable little Cuckoo about the size of a Thrush, first described by Count Salvadori in 1875. The origin of the type specimen is uncertain, but it is believed to have been obtained by Beccari in the Moluccas. Subsequently, Dr. H. O. Forbes procured female examples in the Astrolabe Mountains. Mr. Claude Grant obtained an adult male and female which form a valuable addition to the National Collection. The general plumage is brown, but in the male the top of the head and the malar stripe are black, glossed with steel-blue, and the cheeks and throat are cinnamon. In both sexes the bill is short, thick, and curved. The male has the eye bright red, while in the female it is hazel.

Family CYPSELIDÆ—*Swifts.*

The Swifts, though of especial interest, are not very numerously represented in the collection. The commonest species was that known as the Esculent Swiftlet (*Collocalia fuciphaga*), which produces the best kind of edible nest.

A very interesting discovery was the existence in New Guinea of the large fork-tailed species, *Collocalia whiteheadi*, originally described by myself from the highlands of Luzon, Philippine Islands.

A remarkable Spine-tailed Swift (*Chætura novæ-guineæ*) is new to the National Collection. It was fairly common on the Mimika River, and originally described by Count Salvadori from specimens procured by D'Albertis on the Fly River.

A pair of the magnificent Moustached Swift (*Macropteryx mystacea*), with a wing-expanse of more than two feet, was also procured. The plumage of this bird is mostly grey, but the crown, wings, and long deeply-forked tail are black glossed with purplish-blue. The eye-brows and moustache-stripes as well as the scapulars are white, the two former being composed of lengthened, narrow, pointed plumes. The male has a small chestnut spot behind the ear-coverts which is absent in the female. The nesting-habits of this species are very curious; it makes a very small exposed half-saucer-shaped nest of bark and feathers gummed by saliva to a branch or stump which is barely large enough to contain the single white egg, and ridiculously small in comparison with the size of the bird. When incubating, the greater part of the bird's body must rest on the branch to which the nest is attached.

Families CAPRIMULGIDÆ and PODARGIDÆ—*Nightjars and Frog-mouths.*

The common Nightjar of the country found along the shingly banks of the rivers was *Caprimulgus macrurus*, a widely distributed species. After the ground had been cleared for the base-camp at Wakatimi it was visited every evening by a number of Nightjars, which no doubt found such a large open space an admirable hunting-ground, and the members of the Expedition derived great pleasure from watching their graceful evolutions. Another very rare Nightjar was *Lyncornis papuensis*, not previously included in the National Collection. Frog-mouths were represented by the larger species, *Podargus papuensis*, and the smaller, *P. ocellatus*. At some of the stopping-places on the river night was made hideous by their mournful cries, repeated to distraction on every side, and ending up with a sharp snap.

A single example of the rare Wallace's Owlet-Nightjar (*Ægotheles wallacei*) was collected by Mr. G. C. Shortridge on the Wataikwa River. It has a peculiar uniform blackish upper plumage, without any trace of a distinct nuchal collar. No doubt, like its Australian ally, it roosts in holes in trees during the daytime and captures its prey on the wing at night, like the true Nightjars, though the flight is said to be less tortuous.

Family Bucerotidæ—*Hornbills.*

The only representative of the Bucerotidæ is the Wreathed Hornbill (*Rhytidoceros plicatus*), a large bird with a casque formed of overlapping plates on the base of the upper mandible. The male is black with the head and neck chestnut and the tail white, while the female differs in having the head and neck black. It was plentiful everywhere, and its flesh was reported to be good eating. It frequented the fruit-bearing trees in company with various species ot Pigeons, and Mr. Claude Grant on one or two occasions observed pairs at what he took to be their nesting-holes high up in the bare trunks of very tall trees. Their heavy noisy flight and raucous call, continually repeated, render these birds difficult to overlook.

Family Meropidæ—*Bee-eaters.*

A species of Bee-eater, *Merops ornata*, was common about the base-camp. It ranges to Australia, the Moluccas, and westwards to the Lesser Sunda group. Mr. Goodfellow says it swarmed in some places after the month of April, though previous to that date none had been met with.

Family CORACIIDÆ—*Rollers.*

Two species of Rollers inhabit the Mimika district, *Eurystomus crassirostris*, a greenish-blue species with brilliant ultramarine throat, quills, and tail-feathers and vermilion bill and feet; and a smaller species, *E. australis*, with brownish-green upper-parts, verditer-blue breast, and bluish-green bases to the tail-feathers.

Both Bee-eaters and Rollers were common in flocks along the banks of the Mimika during April and May. They were preying on the canary-coloured May-fly, which swarmed on the waters at that season.

Family ALCEDINIDÆ—*Kingfishers.*

Kingfishers were well represented in the Mimika district, and Mr. Goodfellow says that the Sacred Kingfisher (*Halcyon sanctus*) was undoubtedly the most conspicuous bird about the base-camp, where its harsh cry could be heard all through the hot hours of the day. The huts and store-houses were infested by myriads of black crickets, which take the place of the cockroaches found in other countries, and commit fearful havoc among stores and personal possessions. The constant packing up of goods to send up the river drove thousands of these insects to seek shelter in other parts of the camp, and, at such times, Kingfishers became very tame and darted in and out among the buildings, taking advantage of the feast thus afforded. Mr. Claude Grant shot a single specimen of the lovely Kingfisher *H. nigrocyanea*, the only one obtained. It has the crown, wings, upper tail-coverts, tail, and breast dark ultramarine blue, the rump cobalt-blue, the throat and a band across the breast pure white, and the remainder of the plumage black. Another species met with at the base-camp was *H. macleayi*, with purple head, wings, and tail, verditer-blue back, white lores, collar, and under-parts, and cinnamon flanks. Only one example of this fine bird was procured. Others were the dark purplish-blue and chestnut *Alcyone lessoni,* about the size of our Common Kingfisher, and the much smaller *A. pusilla* similarly coloured above, but with the under-parts pure white.

Ceyx solitaria, a closely allied species, with purple spangled upper-parts and cinnamon-yellow under-parts was also found on the Mimika, and Mr. Goodfellow was surprised to find this diminutive species, which he had believed to be exclusively a fish-eater, greedily devouring a canary-coloured May-fly which swarmed on the waters of the Mimika during April and May.

On the river a few specimens of the large "Jackass" Kingfisher *(Dacelo intermedia)* were obtained, but the species was by no means common. The most conspicuous bird was Gaudichaud's Kingfisher (*Sauromarptis gaudichaudi*), and its loud grating call might be heard in all directions. The adult is a very handsome bird, the black of the upper-parts being relieved by the electric-blue tips to the wing-coverts and feathers of the lower back and rump, the wings and tail are washed with dull purplish-blue, the throat is white and extends in a buff collar round the neck, the under wing-coverts are buff and the breast and rest of the underparts deep chestnut. The natives brought numbers of the half-fledged young of this species to the base-camp during May and June, and many were purchased by the Javanese soldiers and convicts; but as they fed them on boiled rice only, their lives were brief. The great Shoe-billed Kingfisher (*Clytoceyx*) was not met with by the members of our Expedition, but Dr. Van Oort has described a new form, which he calls *Clytoceyx rex imperator,* from a specimen procured by Dr. Lorentz on the Noord River. Another large species, *Melidora macrorhina,* with a curious brown spotted plumage above, was not uncommon; it usually frequented the lower branches and undergrowth within a few feet of the ground, and when disturbed merely mounted to a more conspicuous perch.

The lovely Racquet-tailed species of the genus *Tanysiptera* were not procured, though Dr. H. A. Lorentz met with a specimen on the Noord River.

Families Psittacidæ and Loriidæ—*Parrots and Lories.*

Another very numerously represented group is the Parrots, of which twenty-two different species were procured, varying in size from the Great Black Cockatoo (*Microglossus aterrimus*), which is about the size of a Raven and has an enormously powerful bill, to the tiny Pygmy Parrot (*Nasiterna keiensis*), which is about the size of a Golden-crested Wren. This latter species has recently been described by Mr. Walter Rothschild as new, under the name of *Nasiterna viridipectus* from specimens obtained by A. S. Meek in the Oetakwa district, but they do not seem to differ from the birds found on the Kei and Aru Islands and also in the neighbourhood of the Fly River. The plumage is green, paler below, the crown dull orange, the shoulders spotted with black, the middle tail-feathers blue and the outer pairs black, with yellow and green tips. A few solitary Black Cockatoos might be seen on the lower river, sitting on the tops of the highest trees; their loud whistle always attracted attention, and even on their high perches their red faces and erect crests were conspicuous. The Common Cockatoo of the country was *Cacatua triton*, a moderate-sized species with a yellow crest, which was met with in small numbers throughout the mangrove-belt, but it was a shy bird and when approached always flew away, screaming. Lories of different kinds were numerous and included some of the most brilliantly coloured species, *Lorius erythrothorax* combining in its plumage black, crimson, scarlet, purple, blue, green, and bright yellow. The adult has the under wing-coverts uniform scarlet, in marked contrast to the bright yellow inner webs of the primary-quills; but in younger birds the smaller under wing-coverts are mottled with scarlet, blue, black, green, and yellow, and the long outer series are yellow with greyish-black ends, making a dark band at the base of the quills. In this stage the bird has been described by Dr. A. B. Meyer as *Lorius salvadorii*.

A less brilliantly coloured and more common species in the neighbourhood of the Mimika was *Eos fuscatus*, which has the general colour above sooty-black shaded on the middle of the crown and neck with reddish-orange, and the under-parts widely banded with scarlet. A lovely species with a longer tail was *Trichoglossus cyanogrammus*, which is green with a blue face and greenish-yellow collar, and has the scarlet chest-feathers edged with purple, while the belly and flanks are yellow barred with green.

The tiniest Lory is *Loriculus meeki*, a minute species, about the size of a Blue Titmouse, with brilliant green plumage, orange-yellow forehead, and the rump and upper tail-coverts as well as a spot on the throat scarlet. The female differs in having the forehead and cheeks verditer-green.

The genus *Geoffroyus* is represented by two species: the commoner *G. aruensis* with the plumage green, the male having the crown and nape violet-blue and the rest of the head and neck scarlet, while in the female these parts are brown; also the much rarer *G. simplex*, which is entirely green with a dull lilac-blue ring round the neck. This latter is a very rare bird in collections, but was seen on the higher parts of the mountains above the Iwaka River in flocks of upwards of twenty individuals.

Other small and brilliantly coloured species of Lories are *Charmosynopsis pulchella* and *C. multistriata*, the latter a remarkable new species with green plumage and the whole of the under-parts streaked with bright yellow. It was recently described by Mr. Rothschild from a male shot by A. S. Meek on the Oetakwa River; a second specimen, a female, was obtained on the Mimika by Mr. Goodfellow. We must also mention *Chalcopsittacus scintillans*, *Hypocharmosyna placens*, *Charmosyna josephinæ*, the rare *Glossopsittacus goldiei*, and three species of *Cyclopsittacus*, viz. *C. melanogenys*, which is green with a white throat, black cheeks, deep orange breast, and ultramarine wings; *C. diophthalmus*; and *C. godmani* [O.-Grant, Bull. B. O. C. xxvii. p. 67 (1911)], a new and handsome species with the general colour green, the head and nape orange-scarlet, the upper mantle orange-yellow, the cheeks covered with long, pointed, yellowish feathers, and the chest verditer-blue.

Behind the camp at Wakatimi lay a swamp which, Mr. Goodfellow tells us, was every night the roosting-place of thousands of Lories, chiefly *Eos fuscatus*, and there were also smaller flocks of *Trichoglossus cyanogrammus*. Long before sunset and until it was quite dusk flocks of many hundred birds coming from all directions flew over with deafening noise. Often some weak branch would give way under their weight, causing a panic just as the noise was beginning to subside, and clouds of these birds would again circle around, seeking a fresh roosting-place and keeping up a continual din.

One of the most peculiar Parrots, and bearing a marked external resemblance to the Kea of New Zealand, is the Vulturine Parrot (*Dasyptilus pesqueti*), which has the black skin of the face almost entirely bare, the plumage black and scarlet on the wings, rump, and belly, the breast-feathers having pale sandy margins. Its hoarse, grating call, quite unlike that of any other species, could be heard a long way off, and was continually uttered when on the wing. Mr. Goodfellow says it usually moves about in parties of four or five individuals, and that occasionally as many as seven may be seen together. When not feeding they always select the tallest trees to rest in, preferring dead ones which tower above the general level of the jungle, and in which they remain for hours at a time in rain or sunshine. They do not climb after the usual manner of Parrots, but jump from branch to branch with a jerky movement, like the Lories, and with a rapid flicking movement of the wings. They feed entirely on soft fruits, chiefly wild figs. Apparently the species feeds on the plains and retires to the mountains to roost, for every evening flocks or pairs were observed passing high over the camp at Parimau, and making their way towards the Saddle-peak range.

A handsome new Parroquet of the genus *Aprosmictus* was discovered, and has been named *A. wilhelminæ* [O.-Grant, Bull. B. O. C. xxvii. p. 83 (1911)], in honour of the Queen of Holland. The male has the head, neck, and underparts scarlet, the wings green, with a pale yellow-green band across the coverts, the mantle and back are mostly deep purplish-blue, and the tail black tinged with purplish.

Finally, the Eclectus Parrot (*Eclectus pectoralis*) was common. The remarkable difference in the coloration of the sexes might lead some to believe that they belonged to quite different species, the male being mostly green with scarlet sides and under wing-coverts, while the female is maroon, with the head, neck, and breast scarlet, and the mantle, belly, sides, and under wing-coverts blue.

Families BUBONIDÆ and STRIGIDÆ—
Wood-Owls and Barn-Owls.

The only Owl of which examples were obtained was a small species of Brown Hawk-Owl (*Ninox theomaca*), with the upper-parts, back, wings, and tail uniform dark brown, and the under-parts deep chestnut. It was a strictly nocturnal species, and confined to the jungle along the base of the mountains, where its weird double call "yon-yon" might constantly be heard after dark.

A form of the Barn-Owl (*Strix novæ-hollandiæ*), which occurs in the district, was not obtained by the Expedition.

Family FALCONIDÆ—*Eagles and Hawks.*

New Guinea possesses a very remarkable Harpy-Eagle (*Harpyopsis novæ-guineæ*) allied to the Harpy-Eagles of America and to the Great Monkey-eating Eagle (*Pithecophaga jefferyi*) which inhabits the forests of the Philippine Islands. The New Guinea bird is like a large Goshawk, having a long tail and comparatively short and rounded wings; the feet are armed with very powerful claws, but in strength and power it is far inferior to its great Philippine ally or to the still more powerful species inhabiting Central America. Mr. Claude Grant says that this species was seldom met with; it has a rather loud cry and a beautiful soaring flight, often in ascending circles. Besides this large Eagle, two species of Goshawk, *Astur etorques* and *A. poliocephalus*, were met with, likewise a small chestnut and white Brahminy Kite (*Haliastur girrenera*). A small Sparrow-Hawk was obtained near the mouth of the Mimika River, but being in immature plumage its identification is at present uncertain. Reinwardt's Cuckoo-Falcon (*Baza reinwardti*), with a crested head and banded breast, was rather a rare bird, and appears to feed largely on insects.

Family PHALACROCORACIDÆ—*Cormorants.*

The small black-backed white-breasted species *Phalacrocorax melanoleucus* is the only representative of this group. Several specimens were shot on the upper waters of the Mimika, at Parimau, and at the base-camp at Wakatimi.

Family ANATIDÆ—*Ducks.*

The handsome white-necked Sheld-duck (*Tadorna radjah*) differs from the Australian form in being much darker on the back, the plumage being practically black with indistinct mottlings of dull rufous on the mantle. This dark form, found also in the Moluccas, was common about the mouth of the Mimika River. The more rufous-backed Australian form has been named *T. rufitergum* by Dr. Hartert.

The only other species of Duck brought home was an immature male Garganey (*Querquedula discors*) shot on the Kapare River.

Family IBIDIDÆ—*Ibises.*

The Eastern form of the Sacred Ibis (*Ibis strictipennis*) was met with at the mouth of the Mimika. It is easily distinguished from its western ally by having the innermost secondaries mottled with black and white.

Family ARDEIDÆ—*Herons.*

Several different species of Herons were procured, including the Night-Heron (*Nycticorax caledonica*), the

Yellow-necked Heron (*Dupetor flavicollis*), the White Heron (*Herodias timoriensis*), and a Tiger-Bittern (*Tigrisoma heliosylus*). The last-named is a very fine bird with the general colour above black boldly barred with rufous and buff, the under-parts buff barred on the neck and chest with black. The feathers on the neck and chest are very long and broad, and no doubt form a most imposing ruff when the bird is displaying.

Families ŒDICNEMIDÆ, CHARADRIIDÆ, and LARIDÆ—*Stone-Plovers, Plovers, and Gulls.*

A number of small wading-birds were procured near the mouth of the river, and two species of Terns, but as all belong to well-known, widely distributed species, there is no special interest attaching to them. I may, however, mention that the great Australian Curlew (*Numenius cyanopus*) and the large Australian Thicknee (*Esacus magnirostris*) were among the species found at the mouth of the Mimika.

Family RALLIDÆ—*Rails.*

The only Rail met with was an example of *Rallina tricolor*, which has the head, neck, and chest bright chestnut, and the rest of the plumage dark brown with white bars on the wing-feathers. It also occurs in some of the Papuan Islands and in North-eastern Australia.

Family COLUMBIDÆ—*Pigeons.*

Pigeons were very numerously represented, no fewer than twenty-six different species being obtained by the Expedition. Some of the smaller forms are among the most beautifully coloured birds met with in New Guinea. The Crowned Pigeons (*Goura*) are represented by *G. sclateri*, which was fairly common near the base-camp and was met with in all places visited by the Expedition. In spite of the numbers shot for food during the whole time the Expedition remained in the country, the supply did not appear to diminish. This fine Pigeon and a few others afforded the only fresh meat to be had. On the canoe-journeys up the river Sclater's Goura was frequently met with in the early mornings in parties of two or three, searching for aquatic life along the muddy banks. When disturbed they did not immediately take flight, but with raised wings pirouetted around for a few seconds and then flew to the nearest high tree. Mr. Goodfellow found the remains of small crabs in their stomachs, and a large percentage of the birds shot were infested by a small red parasite, the same or similar to that which is known in other parts of New Guinea as "Scrub-itch."

Another very handsome bird is the Ground-Pigeon (*Otidiphaps nobilis*), with the head bluish-black, the nape dull metallic-green, the mantle and wings purplish-chestnut, and the rest of the plumage deep purple, all being more or less metallic. Its long legs and the upward carriage of its long tail give it much the appearance of a Bantam hen. It was fairly common, but being extremely shy was rarely met with.

Among the larger Fruit-Pigeons we must specially mention *Carpophaga pinon*, which has the general appearance of a large Wood-Pigeon. It was met with in large flocks and proved an excellent bird for the table. Another very striking species, of rather lesser proportions and very much rarer, was Müller's Fruit-Pigeon (*Carpophaga muelleri*), easily distinguished by its white throat, the bold black ring round its neck, and its shining chestnut mantle. Among the handsomest was *Carpophaga rufiventris*, a bird with the breast cinnamon and the wings and back metallic green, copper, and purple. Lastly, a very striking form was the large creamy-white Pigeon (*Myristicivora spilorrhoa*) with the flight-feathers, tips of the tail-feathers and under tail-coverts blackish. It appears to be entirely confined to the mangrove-swamps, and was observed breeding in May along the creeks near the mouth of the river, no less than seven nests being found in one tree.

As already stated, among the smaller Fruit-Pigeons many are very beautifully marked and brilliantly coloured, but always with the most harmonious shades. It would seem as though Nature had almost exhausted her scheme of coloration in dealing with some of these birds; for we find two totally different species, *Ptilopus zonurus* and *P. gestroi*, occurring together in which the markings and colours of the plumage are almost identical; on the under-surface the two species are practically alike, both have the chin and throat pale lavender, extending in a ring round the neck, the fore-neck orange, the chest washed with vinous-brown, and the remainder of the under-parts green; on the upper-surface the top of the head and nape are greenish-yellow and the rest of the upper-parts green, but in *P. zonurus* the median wing-coverts are green with a subterminal spot of bright pink, while in *P. gestroi* the least wing-coverts are crimson and the next series grey fringed with greenish-yellow. Another parallel case of close resemblance is found between the small *Ptilopus nanus* and the larger *P. coronulatus*. Though really extremely distinct species the underparts are very similarly coloured, both being green with a bright magenta patch on the middle of the breast, and the belly and under tail-coverts mostly bright yellow: viewed from the upper surface the two birds are, however, very different, *P. coronulatus* having the crown lilac-pink, edged posteriorly with bands of crimson and yellow, while *P. nanus* has the head green, but the ends of the scapulars and secondaries are deep shining bluish-green, tipped with bright yellow. Even more brilliantly coloured species than those already mentioned are *Ptilopus pulchellus*, *P. superbus*, *P. aurantiifrons*, and *P. bellus*.

Near the camp at Wataikwa large flocks of D'Albertis' Pigeon (*Gymnophaps albertisii*) were observed coming in every evening from their feeding-grounds on the high mountains to roost on the plains below. Mr. Goodfellow tells us that their flight is extremely rapid and that their strange aerial evolutions remind one of the common "Tumbler" Pigeons.

The Long-tailed Cuckoo-Doves were represented by the very large *Reinwardtœnas griseotincta* and the smaller chestnut-plumaged *Macropygia griseinucha*; the former being a large and abnormally long-tailed bird with the head, mantle, and under-parts grey and the back and tail chestnut.

Family MEGAPODIIDÆ—*Megapodes or Mound-builders.*

The Game-birds are represented by three species of Mound-builders, two being Brush-Turkeys and the other a true Megapode (*Megapodius freycineti*). The fact that two closely allied species of Brush-Turkeys are found in the same district is of considerable interest. The common species of the country, *Talegallus fuscirostris*, has a very wide coastal range, being also found in South-eastern New Guinea and extending along the north coast to the middle of Geelvink Bay. The other species, *T. cuvieri*, is of western origin, being hitherto known from the Arfak Peninsula and the islands of Salwatti, Mysol, and Gilolo. Its occurrence on the Iwaka River was quite unexpected, and no doubt the ranges of the two species overlap in the neighbourhood of the Mimika in the south and in the vicinity of Rubi on Geelvink Bay in the north. In both the plumage is black, but *T. cuvieri* is a larger bird than *T. fuscirostris*, and is easily recognised by having the tibia feathered right down to the tibio-tarsal joint and the bill orange-red instead of sooty-brown.

All these species are of the greatest interest on account of their remarkable nesting-habits, and their nesting-mounds of decaying vegetable matter were conspicuous objects in the jungle. The eggs, which are very large for the size of the birds, are buried among the débris which the birds rake together into a large heap, the young being hatched, as in an incubator, by the warmth of the decaying leaves. The parent bird, after burying its eggs, takes no further notice of them, but the young on leaving the shell are fully feathered and able to fly and take care of themselves.

Family Casuariidæ—*Cassowaries.*

The discovery made by Mr. Walter Goodfellow that two distinct forms of two-wattled Cassowary occur side by side on the Mimika River has greatly modified Mr. Rothschild's views on the classification of the genus, and he now finds that the ten forms possessing two wattles, when placed side by side, fall naturally into two groups, one consisting of the Common Cassowary (*Casuarius casuarius*), divisible into six subspecies or races, and the other of *C. bicarunculatus,* which may be divided in four subspecies. The large forms found on the Mimika are *C. sclateri* representing the first group and *C. intensus* representing the second. Both these birds have a large elevated casque or helmet, and differ chiefly in the pattern and coloration of the bare neck-wattles.

These Cassowaries were seen at various times searching for food in the pools and shallow waters of the river-beds, and during the cross-country marches would sometimes dash across the trail, affording but a momentary glimpse.

The natives have distinct names for the male and female birds, and judging from the quantities of feathers in their possession must often succeed in capturing them. Eggs and newly-hatched chicks were brought in during January and February. On one occasion at Parimau some eggs must have been kept by the natives for a few days before they hatched, for young were brought to the camp which had evidently just emerged from the shells.

A very interesting discovery was made by Mr. Claude Grant on the foot-hills, where he met with a new dwarf species of Cassowary, *C. claudii* [O.-Grant, Bull. B. O. C. xxix. p. 25 (1911)]. It is allied to *C. papuanus*, but has the hind part of the crown and occiput black instead of white. Like that bird it has a low triangular casque, and belongs to a different section of the genus from the two larger species already mentioned.

C. claudii has very brilliantly coloured soft parts. The occiput and sides of the head are entirely black; between the gape and the ear is a patch of deep plum-colour; the upper half of the back of the neck is electric-blue, shading into violet-blue on the sides and fore-part of the neck including the throat; the lower half of the back of the neck is orange-chrome, this colour extending down the upper margin of a bare magenta-coloured area situated on each side of the feathered part of the neck. This fine bird is now mounted and on exhibition in the Bird Gallery at the Natural History Museum.

List of the Principal Papers relating to the Birds of New Guinea, including the Kei and Aru Islands.

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1875–88. *Gould.* Birds of New Guinea and the adjacent Papuan Islands. (Completed by R. B. Sharpe) (1875–88).
1880–82 & 1889–91. *Salvadori.* Ornitologia della Papuasia e delle Molluche. Vols. i.–iii. (1880–82). Aggiunte, pts. i.–iii. (1889–91).
1883. *Ramsay.* Proc. Linn. Soc. N.S.W. viii. pp. 15–29 (1883).
1884. *Sharpe.* Journ. Linn. Soc., Zool. xvii. pp. 405–408 (1884).
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1885. *Finsch and Meyer.* Zeit. ges. Orn. ii. pp. 369–391, pls. xv.–xxii. (1885).
Guillemard. P. Z. S. 1885, pp. 615–665, pl. xxxix.
1886. *Meyer.* Monat. Schutze Vogelw. 1886, pp. 85–88, pl.
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Finsch and Meyer. Zeit. ges. Orn. iii. pp. 1–29, pls. i.–vi. (1886).
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1887. *Ramsay.* Proc. Linn. Soc. N.S.W. (2) ii. pp. 239–240 (1887).
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1888. *Meyer.* Reisen in Kaiser Wilhelms-Land und Englisch New-Guinea in dem Jahren 1884 u. 1885 an Bord des Deutschen Dampfers "Samoa." Leipzig, 1888.
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1889. *Cabanis.* J. f. O. 1889, p. 62, pls. i. & ii.
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1890. *De Vis.* British New Guinea. Report of the Administration for the period 4th Sept., 1888, to 30th June, 1889. App. G. Report on Birds from British New Guinea, pp. 105–116 (1890). (Reprinted, Ibis, 1891, pp. 25–41.)

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1891. *Oustalet.* Le Nat. v. pp. 260–261 (1891).

Sclater. Ibis, 1891, p. 414, pl. x.

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1891–98. *Sharpe.* Monogr. *Paradiseidæ* and *Ptilonorhynchidæ* (1891–98).

1892. *De Vis.* Ann. Queensland Mus. ii. pp. 4–11 (1892).

De Vis. Annual Report Brit. New Guinea, 1890–91. App. CC. pp. 93–97, pl. (1892).

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Meyer. J. f. O. 1892, pp. 254–266.

Crowley. Bull. B. O. C. i. p. xvi (1892).

1893. *Meyer.* Abh. Zool. Mus. Dresden, 1892–93, No. 3, pp. 1–33, pls. i. & ii. (1893).

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Sclater. Ibis, 1893, pp. 243–246, pl. vii. text-fig.

Finsch. Ibis, 1893, pp. 463–464.

Meyer. Ibis, 1893, pp. 481–483, pl. xiii.

1894. *De Vis.* Annual Report Brit. New Guinea, 1894, pp. 99–105.

Salvadori. Ann. Mus. Civ. Genov. (2) xiv. pp. 150–152 (1894).

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Sharpe. Bull. B. O. C. iv. pp. xii–xv (1894).

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Mead. Amer. Natural. xxviii. pp. 915–920, pls. xxix–xxxi. (1894).

1895. *Meyer.* Bull. B. O. C. iv. p. xvii (1895).

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Hartert. Nov. Zool. ii. p. 67 (1895).

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1897. *Rothschild.* Bull. B. O. C. vi. pp. xv, xvi, xxiv, xxv, xl, xlv, liv (1897).
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Reichenow. J. f. O. 1897, pp. 201–224, pls. v. & vi.
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1905. *Ogilvie-Grant.* Ibis, 1905, pp. 429–440, pl. viii. text-figs. 22–26.
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1912. *Rothschild.* Ibis, 1912, pp. 109–112, pl. ii.
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VI.—*Commentary on the new 'Hand-list of British Birds.*

By P. L. Sclater, D.Sc., F.R.S.

In the last page of 'The Ibis' for 1912 (p. 688), there was a notice of the publication of a new 'List of British Birds,' drawn up by four well-known ornithologists (Dr. Hartert, Mr. Jourdain, Mr. N. C. Ticehurst, and Mr. Witherby), and stated to be in exact accordance with the International

Rules of Zoological Nomenclature*. It was also announced that some remarks on this important publication would be given in the next number of 'The Ibis.' The editor of the present series of our Journal has requested me to take this task off his hands, and I have agreed to do so, it being understood that the writer of these remarks is solely responsible for them, and not the editor of the Journal in which they are published.

On reading the "Introduction" to the new 'Hand-list' I was much surprised to find no mention of the Rules for Zoological Nomenclature prepared by the British Association for the Advancement of Science. Surely, before adopting wholesale the so-called "International" Rules, it would have been better to ascertain what our own zoologists had done in this matter. Yet the Rules of the British Association are utterly ignored, and it is even stated that the nomenclature of Birds has been "neglected for more than 150 years, although a requisite of the greatest importance." But this statement is by no means correct, as I shall proceed to shew.

When I began my residence at Oxford, at Easter 1846, as a Scholar of Corpus Christi College, I quickly made the acquaintance of the late Hugh Edwin Strickland, F.R.S., who was at that time living at Oxford and giving lectures there as Reader in Geology. When not engaged with his lectures Strickland was at the Radcliffe Library nearly every day, at work on his 'Ornithological Synonyms,' as he proposed to call his book on the nomenclature of Birds †. We soon became great friends, and remained so until his much lamented death by a railway accident in 1853. In fact Strickland was my master and instructor in all matters regarding ornithology, and I always endeavoured to follow his excellent advice.

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* Règles Internationales de la Nomenclature Zoologique adoptées par les Congrès Internationaux de Zoologie. Paris, 1905.

† This work was left incomplete at Strickland's death. The first part of it, containing the synonymy of the Accipitres, was printed and published by Van Voorst (in 1855), edited by Mrs. Hugh Strickland and Sir William Jardine. The MS. of the rest of the work is at Cambridge along with the Strickland Collection and Library.

As with the authors of the present 'Hand-list' so with Strickland, "Priority" was the foundation of his work. He rightly maintained that the only mode of attaining unanimity in nomenclature was the rule of priority, but he did not carry his views on the subject quite so far as some of our friends do at the present time.

In July 1841, Strickland wrote to his father-in-law, Sir William Jardine, as follows:—

"I have some thought of moving in the Zoological section of the British Association (at Plymouth) for the appointment of a Committee to prepare a set of regulations with the view of establishing a permanent system of Zoological Nomenclature." This plan, which was also communicated to Darwin, Sir John Richardson, Leonard Jenyns, Prince Charles Bonaparte, and other good friends, met with universal approval. As proposed by Strickland it was brought before the British Association at the Plymouth Meeting, and a Committee, consisting of Mr. Darwin, Prof. Henslow, Rev. L. Jenyns, Mr. Ogilby, Mr. J. Phillips, Dr. Richardson, Mr. Strickland, and Mr. J. O. Westwood, was appointed "to consider the rules by which the nomenclature of Zoology may be established on a uniform basis." The names of Mr. W. J. Broderip, Prof. Owen, Mr. W. E. Shuckard, Mr. G. R. Waterhouse, and Mr. Yarrell were afterwards added to the Committee. The subject was well considered by this select Committee under the guidance of Strickland, who was appointed Secretary. The Report of the Committee, which I believe was mainly (if not entirely) prepared by Strickland, was presented to the meeting of the British Association at Manchester. This Report is commonly known as the 'Stricklandian Code,' and was printed in the eleventh volume of the Reports of the British Association (1842), and in Sir William Jardine's volume of 'Memoirs of Strickland.' *

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* 'Memoirs of Hugh Edwin Strickland, M.A., F.R.S., Deputy Reader of Geology in Oxford.' By Sir William Jardine, Bart. London: Van Voorst, 1858.

Two other editions of the 'Stricklandian Code of Nomenclature' were subsequently printed and published by the British Association: the first, edited by Sir William Jardine, in 1865, and the second, edited by myself, in 1878 *. The history of these two editions and a general account of the whole literature of the subject will be found in a paper which was read before the Zoological Society of London in 1896 †. From what I have there stated, and from the list of the titles of the various Codes of Nomenclature there given, it will be evident that it is not correct to say that the study of Zoological Nomenclature has been neglected during the past 150 years. On the contrary, much has been written about this subject, and a large number of our leading zoologists have given it their best attention. But in the 'Hand-list' it is proposed to throw over all that has been done in this country, and to adopt a Code of Rules that contains, in my opinion, some very objectionable features.

I fully admit that it would be of great advantage to the science of zoology to have the same rules of nomenclature in all countries, and the same name for each species. This, no doubt, was one of the principal reasons for the preparation of the new 'Hand-list of British Birds.'

"If the scientific names of Birds were uniform all over the world," the authors truly say, "what an enormous benefit it would be for ornithologists and for science generally." Indeed it would, but the question is, how can such unanimity be obtained? As already shewn, we have in England a set of scientific names for our birds based on the Stricklandian Code, and familiar to us from their usage in such works as those of Yarrell, Newton, and Saunders.

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* This is the title of the edition of 1878:—'Rules for Zoological Nomenclature drawn up by the late H. E. Strickland, M.A., F.R.S. (assisted by many Zoologists, British and Foreign), at the instance of the British Association.' London: John Murray, Albemarle Street, 1878. 8vo. 28 pp.

† "Remarks on the Diversities between the Rules for naming Animals of the German Zoological Society and the Stricklandian Code of Nomenclature," by P. L. Sclater, P. Z. S. 1896, pp. 306–322.

We are now asked by the authors of the 'Hand-list' to throw this system over altogether, and to adopt in its place their system, which is founded on the rules of the International Committee. Now, if there were any means of enforcing such a change on all the ornithologists of the world, this would indeed be a tempting offer. But experience shews us that such an offer would not be accepted because of the enormous changes it would necessitate in our usual nomenclature. Who would like to call the Redwing "*Turdus musicus,*" or the Barn-Owl "*Tyto alba*"? Some of our friends will reply "Oh! but they will soon get used to it!" A few of the more ardent and energetic workers in ornithology would, no doubt, after a time get used to it. But how about the large array of journalists, local list-makers, and other occasional writers? They would never adopt the new system, nor even recognize their old favourites disguised under their new names.

In order to shew the changes which would have to be made in the 'B. O. U. List' to bring it into conformity with the new 'Hand-list,' I have prepared the following Table, which shews that out of 376 species included in the 'B.O.U. List,' no less than 200 would require alteration. But I doubt very much whether many of our writers on birds would appreciate this step—or would use the new names; and, if this should turn out to be the case, it seems to me that the introduction of the new names would only aggravate the very evil which it is intended to remedy.

I may now venture to remind those who maintain that no attempt has been made to regulate the nomenclature of birds, that besides the rules of the British Association (which apply to the whole of Zoology) a special committee of the British Ornithologists' Union was appointed in 1878 to which the task of preparing a 'List of British Birds' was entrusted. This committee, of which I had the honour of being chairman, held as many as seventy-one meetings and thoroughly discussed the name of every species, its chief object being to ensure a uniform nomenclature for writers in 'The Ibis.' It may well claim to have succeeded in this object, as until the last few years the names used by the leading writers on British Birds (Yarrell, Newton, Saunders, and others) were nearly the same as those of the 'B. O. U. List.' After the long interval of nearly thirty years it was obvious that some changes would be necessary, but not such treatment as would revolutionize the whole system previously adopted. Accordingly, at the General Meeting of the B. O. U. in 1910 a "select" committee was appointed to prepare a new edition of our 'List of British Birds,' and before long we may hope to have the benefit of its labours on this important subject.*

The number of species and subspecies of British birds allowed in the 'Hand-list' is 469. The species are not numbered, but their names are printed in large type, and have no "authority" added to their generic and specific titles. But the "authority" *is* added in the case of the subspecies, so that every subspecies has four names. I think it would have been better to have omitted the authority altogether in the subspecies. It is not correct to quote the Little Tern (for example) as "*Sterna minuta minuta* L.," for Linnaeus never gave it any such name—he called it simply "*Sterna minuta.*" This process is still more objectionable in cases where there are no subspecies. What can be the use of calling the Honey-Buzzard "*Pernis apivorus apivorus*"? and in attributing the duplication of the specific term to Linnaeus, who certainly never gave it that name. There are many other similar cases in the synonymy.

Before concluding my remarks I wish to say that, so far as I am able to judge, the new 'Hand-list' has been well and carefully prepared. I have tried many of the references, and have found them correct. Moreover, all the most recent accessions to the British list are properly entered, so that it will be of much use to all students of British ornithology, even though they may not agree with its nomenclature.

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* See the reports of the General Meetings, 'Ibis,' 1911, p. 553, and 1912, p. 529.

Comparison of the Names of British Birds according to the List of the British Ornithologists' Union (1883) with the Names corresponding to them in the 'Hand-list' (1912).

N.B.—Where the name in the B. O. U. List is different from that of the Hand-list, the latter name is printed in italics.

No.	Name, B. O. U. List.	Page	Name in Hand-list.	Page
1.	Turdus viscivorus	1	Turdus viscivorus	74
2.	Turdus musicus	1	*Turdus philomelus*	75
3.	Turdus iliacus.............	2	*Turdus musicus*	76
4.	Turdus pilaris	2	Turdus pilaris	74
5.	Turdus atrigularis	3	*Turdus ruficollis*	77
6.	Turdus varius..............	3	*Turdus dauma*	73
7.	Turdus merula	4	Turdus merula	79
8.	Turdus torquatus	5	Turdus torquatus	77
9.	Monticola saxatilis	5	Monticola saxatilis	79
10.	Saxicola œnanthe	6	*Œnanthe œnanthe*	80
11.	Saxicola stapazina	6	*Œnanthe hispanica*	81
12.	Saxicola deserti	7	*Œnanthe deserti*	80
13.	Pratincola rubetra	7	*Saxicola rubetra*	83
14.	Pratincola rubicola	8	*Saxicola torquata*	84
15.	Ruticilla phœnicurus........	8	*Phœnicurus phœnicurus*	85
16.	Ruticilla titys..............	9	*Phœnicurus ochrurus*	85
17.	Cyanecula wolfi	9	*Luscinia cyanecula*	88
18.	Cyanecula suecica	10	*Luscinia suecica*	88
19.	Erithacus rubecula	10	*Dandalus rubecula*	89
20.	Daulias luscinia	11	*Luscinia megarhyncha*	86
21.	Sylvia cinerea..............	11	*Sylvia communis*	69
22.	Sylvia curruca	12	Sylvia curruca	70
23.	Sylvia orphea..............	12	*Sylvia hortensis*	67
24.	Sylvia atricapilla	12	Sylvia atricapilla	69
25.	Sylvia hortensis	13	*Sylvia borin*	68
26.	Sylvia nisoria	13	Sylvia nisoria	67
27.	Melizophilus undatus........	14	*Sylvia undata*	72
28.	Regulus cristatus	14	*Regulus regulus*	48
29.	Regulus ignicapillus	15	Regulus ignicapillus	49
30.	Phylloscopus superciliosus ..	15	Phylloscopus superciliosus ..	60
31.	Phylloscopus rufus	16	*Phylloscopus collybita*	56
32.	Phylloscopus trochilus	16	Phylloscopus trochilus	57
33.	Phylloscopus sibilatrix	17	Phylloscopus sibilatrix	59
34.	Hypolais icterina	17	Hypolais icterina	66
35.	Aëdon galactodes	18	*Agrobates galactodes*	72
36.	Acrocephalus streperus	18	Acrocephalus streperus	63
37.	Acrocephalus palustris	19	Acrocephalus palustris	64
38.	Acrocephalus turdoides......	19	*Acrocephalus arundinaceus* ..	63
39.	Acrocephalus aquaticus	20	Acrocephalus aquaticus	65

No.	Name, B. O. U. List.	Page	Name in Hand-list.	Page
40.	Acrocephalus phragmitis	20	*Acrocephalus schœnobænus*	65
41.	Locustella nævia	20	Locustella nævia	62
42.	Locustella luscinioides	21	Locustella luscinioides	61
43.	Accentor modularis	22	*Prunella modularis*	90
44.	Accentor collaris	23	*Prunella collaris*	90
45.	Cinclus aquaticus	23	*Cinclus britannicus*	92
46.	Cinclus melanogaster	24	*Cinclus cinclus*	92
47.	Panurus biarmicus	24	Panurus biarmicus	49
48.	Acredula caudata	25	*Ægithalus caudatus*	47
49.	Acredula rosea	25	*Ægithalus caudatus roseus*	47
50.	Parus major	26	Parus major	42
51.	Parus ater	26	Parus ater	44
52.	Parus britannicus	26	Parus britannicus	44
53.	Parus palustris	27	Parus palustris	46
54.	Parus cæruleus	27	Parus cæruleus	43
55.	Parus cristatus	28	Parus cristatus	45
56.	Sitta cæsia	28	*Sitta europæa*	42
57.	Troglodytes parvulus	29	*Troglodytes troglodytes*	91
58.	Motacilla alba	29	Motacilla alba	40
59.	Motacilla lugubris	30	Motacilla lugubris	39
60.	Motacilla melanope	30	*Motacilla boarula*	39
61.	Motacilla flava	31	Motacilla flava	36
62.	Motacilla raii	31	Motacilla raii	38
63.	Anthus pratensis	32	Anthus pratensis	33
64.	Anthus trivialis	33	Anthus trivialis	33
65.	Anthus campestris	33	Anthus campestris	33
66.	Anthus richardi	34	Anthus richardi	32
67.	Anthus spipoletta	34	*Anthus spinoletta*	35
68.	Anthus obscurus	35	Anthus obscurus	36
69.	Oriolus galbula	36	*Oriolus oriolus*	7
70.	Lanius excubitor	37	Lanius excubitor	50
71.	Lanius major	37	*Lanius excubitor*	50
72.	Lanius minor	38	Lanius minor	50
73.	Lanius collurio	38	Lanius collurio	52
74.	Lanius pomeranus	38	*Lanius senator*	51
75.	Ampelis garrulus	39	Ampelis garrulus	53
76.	Muscicapa grisola	40	*Muscicapa striata*	53
77.	Muscicapa atricapilla	41	*Muscicapa hypoleuca*	54
78.	Muscicapa parva	42	Muscicapa parva	55
79.	Hirundo rustica	42	*Chelidon rustica*	93
80.	Chelidon urbica	44	*Hirundo urbica*	94
81.	Cotile riparia	44	*Riparia riparia*	95
82.	Certhia familiaris	45	Certhia familiaris	11
83.	Carduelis elegans	47	*Carduelis carduelis*	9
84.	Chrysomitris spinus	48	*Carduelis spinus*	10
85.	Serinus hortulanus	49	*Serinus canarius*	14
86.	Ligurinus chloris	49	*Chloris chloris*	8
87.	Coccothraustes vulgaris	50	*Coccothraustes coccothraustes*	8
88.	Passer domesticus	51	Passer domesticus	21
89.	Passer montanus	51	Passer montanus	21

No.	Name, B. O. U. List.	Page	Name in Hand-list.	Page
90.	Fringilla cœlebs	52	Fringilla cœlebs	19
91.	Fringilla montifringilla	52	Fringilla montifringilla	20
92.	Linota cannabina	53	*Carduelis cannabina*	14
93.	Linota linaria	53	*Carduelis linaria*	11
94.	Linota rufescens	54	*Carduelis linaria cabaret*	12
95.	Linota hornemanni	54	*Carduelis hornemannii*	13
96.	Linota flavirostris	54	*Carduelis flavirostris*	10
97.	Carpodacus erythrinus	55	Carpodacus erythrinus	16
98.	Pyrrhula europæa	56	*Pyrrhula pyrrhula*	15
99.	Pinicola enucleator	56	Pinicola enucleator	16
100.	Loxia pityopsittacus	57	Loxia pityopsittacus	18
101.	Loxia curvirostra	57	Loxia curvirostra	17
102.	Loxia leucoptera	58	Loxia leucoptera	19
103.	Loxia bifasciata	58	Loxia bifasciata	19
104.	Emberiza melanocephala	59	Emberiza melanocephala	23
105.	Emberiza miliaria	59	*Emberiza calandra*	22
106.	Emberiza citrinella	60	Emberiza citrinella	22
107.	Emberiza cirlus	60	Emberiza cirlus	24
108.	Emberiza hortulana	61	Emberiza hortulana	24
109.	Emberiza rustica	61	Emberiza rustica	25
110.	Emberiza pusilla	61	Emberiza pusilla	25
111.	Emberiza schœniclus	62	Emberiza schœniclus	26
112.	Calcarius lapponicus	62	Calcarius lapponicus	27
113.	Plectrophanes nivalis	63	*Plectrophenax nivalis*	27
114.	Sturnus vulgaris	65	Sturnus vulgaris	6
115.	Pastor roseus	65	Pastor roseus	7
116.	Pyrrhocorax graculus	66	*Pyrrhocorax pyrrhocorax*	6
117.	Nucifraga caryocatactes	67	Nucifraga caryocatactes	4
118.	Garrulus glandarius	67	Garrulus glandarius	5
119.	Pica rustica	68	*Pica pica*	3
120.	Corvus monedula	68	*Colœus monedula*	3
121.	Corvus corone	69	Corvus corone	2
122.	Corvus cornix	69	Corvus cornix	1
123.	Corvus frugilegus	70	Corvus frugilegus	2
124.	Corvus corax	70	Corvus corax	1
125.	Alauda arvensis	71	Alauda arvensis	31
126.	Alauda arborea	71	*Lulla arborea*	30
127.	Alauda cristata	71	*Galerida cristata*	29
128.	Calandrella brachydactyla	72	Calandrella brachydactyla	29
129.	Melanocorypha sibirica	73	Melanocorypha sibirica	28
130	Otocorys alpestris	73	*Eremophila alpestris*	32
131.	Cypselus apus	74	*Apus apus*	95
132.	Cypselus melba	74	*Apus melba*	95
133.	Acanthyllis caudacuta	74	*Chætura caudacuta*	96
134.	Caprimulgus europæus	75	Caprimulgus europæus	96
135.	Caprimulgus ruficollis	75	Caprimulgus ruficollis	97
136.	Dendrocopus major	77	*Dryobates major*	100
137.	Dendrocopus minor	78	*Dryobates minor*	101
138.	Gecinus viridis	79	*Picus viridis*	100
139.	Iynx torquilla	80	Iynx torquilla	102

No.	Name, B. O. U. List.	Page	Name in Hand-list.	Page
140.	Alcedo ispida	80	Alcedo ispida	99
141.	Ceryle alcyon	81	Ceryle alcyon	99
142.	Coracias garrula	82	Coracias garrulus	99
143.	Merops apiaster	82	Merops apiaster	98
144.	Upupa epops	83	Upupa epops	98
145.	Cuculus canorus	83	Cuculus canorus	102
146.	Coccystes glandarius	84	*Clamator glandarius*	103
147.	Coccyzus americanus	84	Coccyzus americanus	103
148.	Coccyzus erythrophthalmus	85	Coccyzus erythrophthalmus	104
149.	Strix flammea	85	*Tyto alba*	108
150.	Asio otus	86	Asio otus	107
151.	Asio brachyotus	86	*Asio flammeus*	107
152.	Syrnium aluco	87	*Strix aluco*	109
153.	Nyctea scandiaca	87	*Nyctea nyctea*	104
154.	Surnia ulula	88	Surnia ulula	105
155.	Surnia funerea	88	*Surnia ulula caparoch*	105
156.	Nyctala tengmalmi	88	*Ægolius tengmalmi*	105
157.	Scops giu	89	*Otus scops*	108
158.	Bubo ignavus	90	*Bubo bubo*	107
159.	Athene noctua	91	Athene noctua	106
160.	Gyps fulvus	91	Gyps fulvus	120
161.	Neophron percnopterus	92	Neophron percnopterus	120
162.	Circus æruginosus	92	Circus æruginosus	116
163.	Circus cyaneus	93	Circus cyaneus	117
164.	Circus cineraceus	93	*Circus pygargus*	117
165.	Buteo vulgaris	94	*Buteo buteo*	115
166.	Archibuteo lagopus	95	*Buteo lagopus*	115
167.	Aquila clanga	96	*Aquila maculata*	114
168.	Aquila chrysaëtus	96	Aquila chrysaëtus	114
169.	Haliaëtus albicilla	97	Haliaëtus albicilla	116
170.	Astur palumbarius	97	*Accipiter gentilis*	117
171.	Astur atricapillus	98	*Acc. gentilis atricapillus*	118
172.	Accipiter nisus	98	Accipiter nisus	118
173.	Milvus ictinus	99	*Milvus milvus*	118
174.	Milvus migrans	99	*Milvus korschun*	119
175.	Elanoides furcatus	100	*Elanoides forficatus*	119
176.	Pernis apivorus	100	Pernis apivorus	119
177.	Hierofalco gyrfalco	101	*Falco rusticolus*	110
178.	Hierofalco candicans	101	*Falco rusticolus candicans*	110
179.	Hierofalco islandus	102	*Falco rusticolus islandus*	110
180.	Falco peregrinus	102	Falco peregrinus	111
181.	Falco subbuteo	102	Falco subbuteo	112
182.	Falco æsalon	103	*Falco regulus*	112
183.	Tinnunculus vespertinus	103	*Falco vespertinus*	113
184.	Tinnunculus alaudarius	104	*Falco tinnunculus*	113
185.	Tinnunculus cenchris	104	*Falco naumanni*	113
186.	Pandion haliaëtus	105	Pandion haliaëtus	119
187.	Phalacrocorax carbo	105	Phalacrocorax carbo	148
188.	Phalacrocorax graculus	106	Phalacrocorax graculus	148
189.	Sula bassana	106	Sula bassana	148

No.	Name, B. O. U. List.	Page	Name in Hand-list.	Page
190.	Ardea cinerea	107	Ardea cinerea	122
191.	Ardea purpurea	108	Ardea purpurea	123
192.	Ardea alba	108	*Egretta alba*	123
193.	Ardea garzetta	108	*Egretta garzetta*	124
194.	Ardea bubulcus	109	*Ardeola ibis*	124
195.	Ardea ralloides	109	*Ardeola ralloides*	124
196.	Ardetta minuta	110	*Ixobrychus minutus*	125
197.	Nycticorax griseus	110	*Nycticorax nycticorax*	125
198.	Botaurus stellaris	111	Botaurus stellaris	125
199.	Botaurus lentiginosus	111	Botaurus lentiginosus	126
200.	Ciconia alba	112	*Ciconia ciconia*	121
201.	Ciconia nigra	112	Ciconia nigra	121
202.	Platalea leucorodia	113	Platalea leucorodia	121
203.	Plegadis falcinellus	113	*Egatheus falcinellus*	122
204.	Anser cinereus	115	*Anser anser*	128
205.	Anser segetum	115	*Anser fabalis*	129
206.	Anser brachyrhynchus	116	Anser brachyrhynchus	130
207.	Anser albifrons	116	Anser albifrons	128
208.	Chen albatus	117	*Anser hyperboreus*	130
209.	Bernicla brenta	117	*Branta bernicla*	132
210.	Bernicla leucopsis	118	*Branta leucopsis*	132
211.	Bernicla ruficollis	119	*Branta ruficollis*	131
212.	Cygnus olor	119	Cygnus olor	127
213.	Cygnus immutabilis	120	*Cygnus olor*	127
214.	Cygnus musicus	120	*Cygnus cygnus*	126
215.	Cygnus bewicki	121	Cygnus bewickii	127
216.	Tadorna cornuta	122	*Tadorna tadorna*	134
217.	Tadorna casarca	122	*Casarca ferruginea*	134
218.	Mareca penelope	123	*Anas penelope*	137
219.	Mareca americana	124	*Anas americana*	137
220.	Dafila acuta	124	Dafila acuta	138
221.	Anas boscas	125	*Anas platyrhyncha*	134
222.	Chaulelasmus streperus	125	*Anas strepera*	135
223.	Querquedula circia	126	*Anas querquedula*	136
224.	Querquedula discors	126	*Anas discors*	136
225.	Querquedula crecca	127	*Anas crecca*	135
226.	Querquedula carolinensis	127	*Anas crecca carolinensis*	136
227.	Spatula clypeata	128	Spatula clypeata	138
228.	Fuligula rufina	128	*Nyroca rufina*	139
229.	Fuligula cristata	129	*Nyroca fuligula*	140
230.	Fuligula marila	129	*Nyroca marila*	141
231.	Fuligula ferina	130	*Nyroca ferina*	139
232.	Nyroca ferruginea	130	*Nyroca nyroca*	140
233.	Clangula glaucion	131	*Nyroca clangula*	141
234.	Clangula islandica	131	*Nyroca islandica*	142
235.	Clangula albeola	132	*Nyroca albeola*	142
236.	Cosmonetta histrionica	132	*Histrionicus histrionicus*	143
237.	Harelda glacialis	133	*Clangula hyemalis*	142
238.	Heniconetta stelleri	133	*Polysticta stelleri*	143
239.	Somateria mollissima	134	Somateria mollissima	144

No.	Name, B. O. U. List.	Page	Name in Hand-list.	Page
240.	Somateria spectabilis	134	Somateria spectabilis	144
241.	Œdemia nigra	135	Oidemia nigra	145
242.	Œdemia fusca	135	Oidemia fusca	145
243.	Œdemia perspicillata	136	Oidemia perspicillata	146
244.	Mergus merganser	136	Mergus merganser	146
245.	Mergus serrator	136	Mergus serrator	147
246.	Mergus cucullatus	137	Mergus cucullatus	147
247.	Mergus albellus	137	Mergus albellus	147
248.	Columba palumbus	138	Columba palumbus	160
249.	Columba œnas	138	Columba œnas	161
250.	Columba livia	139	Columba livia	161
251.	Turtur communis	139	*Streptopelia turtur*	161
252.	Ectopistes migratorius	140	(Omitted.)	
253.	Syrrhaptes paradoxus	140	Syrrhaptes paradoxus	162
254.	Phasianus colchicus	141	Phasianus colchicus	216
255.	Caccabis rufa	141	Caccabis rufa	218
256	Caccabis petrosa	142	(Omitted.)	
257.	Perdix cinerea	142	*Perdix perdix*	217
258.	Coturnix communis	143	*Coturnix coturnix*	217
259.	Lagopus mutus	144	Lagopus mutus	216
260.	Lagopus scoticus	144	*Lagopus lagopus*	216
261.	Tetrao tetrix	145	*Lyrurus tetrix*	215
262.	Tetrao urogallus	145	Tetrao urogallus	216
263.	Turnix sylvatica	146	Turnix sylvatica	215
264.	Rallus aquaticus	146	Rallus aquaticus	214
265.	Porzana maruetta	147	*Porzana porzana*	211
266.	Porzana bailloni	148	*Porzana pusilla*	213
267.	Porzana parva	148	Porzana parva	212
268.	Crex pratensis	149	*Crex crex*	211
269.	Gallinula chloropus	151	Gallinula chloropus	214
270.	Fulica atra	151	Fulica atra	214
271.	Grus communis	152	*Megalornis grus*	210
272.	Otis tarda	153	Otis tarda	209
273.	Otis tetrax	154	Otis tetrax	209
274.	Houbara macqueeni	154	*Houbara undulata*	210
275.	Œdicnemus scolopax	155	*Burhinus œdicnemus*	163
276	Glareola pratincola	155	Glareola pratincola	164
277.	Cursorius gallicus	156	Cursorius gallicus	164
278.	Charadrius pluvialis	157	*Charadrius apricarius*	168
279.	Charadrius fulvus	157	*Charadrius dominicus*	169
280.	Squatarola helvetica	158	*Squatarola squatarola*	169
281	Ægialitis cantiana	158	*Charadrius alexandrinus*	167
282.	Ægialitis curonica	159	*Charadrius dubius*	167
283.	Ægialitis hiaticula	159	*Charadrius hiaticula*	166
284.	Ægialitis vocifera	160	*Charadrius vociferus*	168
285.	Eudromias morinellus	160	*Charadrius morinellus*	165
286.	Vanellus vulgaris	161	*Vanellus vanellus*	170
287.	Strepsilas interpres	161	*Arenaria interpres*	171
288.	Hæmatopus ostralegus	162	Hæmatopus ostralegus	163
289.	Recurvirostra avocetta	162	Recurvirostra avocetta	185

No.	Name, B. O. U. List.	Page	Name in Hand-list.	Page
290.	Himantopus candidus	163	*Himantopus himantopus*	185
291.	Phalaropus hyperborea	164	*Phalaropus lobatus*	184
292.	Phalaropus fulicarius	164	Phalaropus fulicarius	184
293.	Scolopax rusticula	165	Scolopax rusticola	190
294.	Gallinago major	165	*Gallinago media*	189
295.	Gallinago cœlestis	166	*Gallinago gallinago*	189
296	Limnocryptes gallinula	167	Limnocryptes gallinula	190
297.	Limicola platyrhyncha	167	Limicola platyrhyncha	178
298.	Tringa maculata	168	*Tringa maculariá*	180
299.	Tringa fuscicollis	168	*Erolia fuscicollis*	177
300.	Tringa alpina	169	*Erolia alpina*	173
301.	Tringa minuta	169	*Erolia minuta*	174
302.	Tringa temmincki	169	*Erolia temminckii*	175
303.	Tringa minutilla	170	*Erolia minutilla*	175
304	Tringa subarquata	170	*Erolia ferruginea*	174
305.	Tringa striata	171	*Erolia maritima*	177
306	Tringa canutus	171	*Canutus canutus*	172
307.	Machetes pugnax	171	Machetes pugnax	172
308.	Calidris arenaria	172	*Calidris leucophæa*	173
309.	Tryngites rufescens	172	*Erolia subruficollis*	177
310.	Actiturus longicauda	173	*Bartramia longicauda*	171
311.	Tringoides hypoleucus	173	*Tringa hypoleuca*	179
312.	Helodromas ochropus	174	*Tringa ocrophus*	181
313.	Totanus glareola	175	*Tringa glareola*	180
314.	Totanus calidris	176	*Tringa totanus*	182
315.	Totanus fuscus	176	*Tringa erythropus*	183
316.	Totanus canescens	176	*Tringa nebularia*	183
317.	Macrorhamphus griseus	177	Macrorhamphus griseus	179
318.	Limosa lapponica	177	Limosa lapponica	186
319.	Limosa ægocephala	178	*Limosa limosa*	186
320.	Numenius borealis	178	Numenius borealis	188
321.	Numenius phæopus	179	Numenius phæopus	187
322.	Numenius arquata	179	Numenius arquata	187
323.	Sterna macrura	180	*Sterna paradisæa*	195
324.	Sterna fluviatilis	180	*Sterna hirundo*	194
325.	Sterna dougalli	181	Sterna dougallii	194
326.	Sterna minuta	181	Sterna minuta	195
327.	Sterna caspia	182	*Sterna tschegrava*	192
328.	Sterna anglica	182	*Sterna nilotica*	192
329.	Sterna cantiaca	183	*Sterna sandvicensis*	193
330.	Sterna fuliginosa	183	Sterna fuliginosa	196
331.	Sterna anæstheta	184	Sterna anæstheta	196
332.	Hydrochelidon hybrida	184	*Hydrochelidon leucopareia*	191
333.	Hydrochelidon leucoptera	185	Hydrochelidon leucoptera	191
334.	Hydrochelidon nigra	185	Hydrochelidon nigra	190
335.	Anous stolidus	186	Anous stolidus	196
336.	Pagophila eburnea	186	Pagophila eburnea	203
337.	Rissa tridactyla	187	Rissa tridactyla	203
338.	Larus glaucus	187	Larus glaucus	202
339.	Larus leucopterus	188	Larus leucopterus	202

No.	Name, B. O. U. List.	Page.	Name in Hand-list.	Page.
340.	Larus argentatus	188	Larus argentatus	200
341.	Larus fuscus	189	Larus fuscus	201
342.	Larus canus	189	Larus canus	200
343.	Larus marinus	189	Larus marinus	202
344.	Larus ichthyaëtus	190	Larus ichthyaëtus	199
345.	Larus ridibundus	191	Larus ridibundus	198
346.	Larus minutus	191	Larus minutus	198
347.	Xema sabinii	191	Xema sabini	197
348.	Stercorarius catarrhactes	194	*Stercorarius skua*	204
349.	Stercorarius pomatorhinus	194	*Stercorarius pomarinus*	204
350.	Stercorarius crepidatus	195	*Stercorarius parasiticus*	205
351.	Stercorarius parasiticus	195	*Stercorarius longicaudus*	205
352.	Procellaria pelagica	196	*Hydrobates pelagicus*	149
353.	Procellaria leucorrhoa	196	*Oceanodroma leucorhoa*	149
354.	Oceanites oceanicus	197	Oceanites oceanicus	150
355.	Puffinus anglorum	197	*Puffinus puffinus*	153
356.	Puffinus griseus	198	Puffinus griseus	152
357.	Puffinus major	198	*Puffinus gravis*	152
358.	Puffinus obscurus	198	Puffinus obscurus	151
359.	Fulmarus glacialis	199	Fulmarus glacialis	155
360.	Œstrelata hæsitata	200	*Pterodroma hasitata*	154
361.	Bulweria columbina	200	*Bulweria bulwerii*	155
362.	Colymbus glacialis	201	*Gavia immer*	159
363.	Colymbus arcticus	201	*Gavia arctica*	159
364.	Colymbus septentrionalis	202	*Gavia stellata*	160
365.	Podiceps cristatus	202	*Colymbus cristatus*	156
366.	Podiceps griseigena	203	*Colymbus griseigena*	157
367.	Podiceps auritus	203	*Colymbus auritus*	157
368.	Podiceps nigricollis	204	*Colymbus nigricollis*	158
369.	Tachybaptes fluviatilis	204	*Colymbus ruficollis*	158
370.	Alca torda	205	Alca torda	206
371.	Alca impennis	206	Alca impennis	206
372.	Lomvia troile	206	*Uria troile*	206
373.	Lomvia bruennichi	207	*Uria lomvia*	207
374.	Uria grylle	207	Uria grylle	207
375.	Mergulus alle	208	*Alle alle*	208
376.	Fratercula arctica	208	Fratercula arctica	208

It will be seen by this Comparative List that of the 376 names comprised in the 'B. O. U. List' more than one-half would have to be altered in order to bring the 'B. O. U. List' into conformity with the 'Hand-list.' This is, as I consider, so great a defect in the projected change that, in my opinion, the alterations could not be effected, even if other matters could be satisfactorily arranged. It is possible, however, that the Committee of the B. O. U. now at work on Nomenclature may be able to find a way out of the difficulty. It should also be recollected that, according to the Stricklandian Code, the twelfth edition of the 'Systema,' not the tenth, is to be taken as the starting-point of Binomial Nomenclature, and that "toutonyms" are not permitted. These are both obvious advantages, as is also the liberty to correct mistakes and bad grammar. If we take Latin for the language of science we are surely bound to follow its grammatical rules. On all these three important points, which were further elucidated in my address to the Zoological Society in 1896 (above referred to), Strickland's views may be tested by reference to his own writings. Moreover, the Stricklandian Code of 1842 has a long "PRIORITY" in point of date over the International Rules of 1905, and may well claim precedence on that account.

VII.—*Solander as an Ornithologist.* By TOM IREDALE.

IT has been suggested to me that a short note regarding Solander and his connection with ornithology might be of interest to the readers of 'The Ibis.'

To those few who, like myself, have had occasion to delve into the literature surrounding almost any member of the Procellariiformes, the name of Solander has long been familiar, but hitherto it has not been regarded with feelings of pleasure. The numerous manuscript names which confront the investigator in that Order had usually the enigmatic "Sol." attached, and most attempts to fathom the mystery surrounding this name have ended in failure. Those working at the British Museum (Natural History) were enabled to examine unfinished drawings and paintings on which appeared in pencil some of the names usually accredited to "Sol." In a carefully locked box, labelled "Solander MSS.," is contained a number of little books of manuscript slips of descriptions of zoological specimens in the handwriting of Solander. These were also accessible to the interested student, but upon reference to the solitary book labelled "Aves" only a few slips relating to the Diomedeidæ were found. Consequently the determination of the drawings was a difficult matter, and it might have been a worthless pursuit were it not that Latham, in the 'General Synopsis of Birds,' described many Petrels from the collection and drawings of Sir Joseph Banks. Before proceeding further, I propose to outline the career of Dr. Solander, the details of which are drawn from the Journal of Sir Joseph Banks, edited by Sir J. D. Hooker in 1896, where there appears a biographical sketch of his life. I have to thank Mr. W. L. Sclater for drawing my attention to this interesting book. When Mr. Mathews wrote his account of the southern Petrels in his 'Birds of Australia,' he was unaware of this book, as it is not included in the General Library of the British Museum (Natural History), but through inadvertence has been allotted to the Botanical Department, though the zoological items seem to much outnumber the botanical ones.

Daniel Carl Solander was born in Norrland, Sweden, on February 28, 1736, and studied at Upsala, where he took his degree of M.D. and became a pupil of Linné. I have always identified him with the "D. Solandri" mentioned in the introduction to the tenth Edition of Linné's 'Systema Naturæ,' where he is recorded as being a disciple of Linné, who had made a trip into "Lapp, Pitensem and Tornensem in 1753." If this be correct, Solander was only seventeen when he made this journey.

Linné advised him to go to England, and gave him an introduction to Ellis. Solander arrived in England in 1760, and though well recommended to the British Museum no permanency was offered him. Consequently, in 1762, Linné obtained the offer of a botanical professorship at St. Petersburg for him, but on the advice of his English friends this was declined and almost immediately afterwards he was appointed Assistant in the British Museum, where apparently he had been engaged in classifying and cataloguing since his arrival. In 1764 he was elected a Fellow of the Royal Society. It was not until 1767 that he met Banks, but a friendship was at once formed that ended only with death. Banks was the younger man and probably was the more enthusiastic, but the exact connection between the two cannot now be ascertained. Anyhow Banks determined to accompany Captain Cook on his First Voyage, the main purpose of which was to observe the Transit of Venus from the new view-point in the Pacific, the Society Islands, and incidentally to look out for the theoretical Antarctic Continent. The result of Banks' meeting with Solander is thus told in a letter from Ellis to Linné :—"I must inform you that Jos. Banks has prevailed on your pupil Dr. Solander to accompany him in the ship . . . . to the new-discovered country in the South Sea . . . . I must observe to you that his places are secured to him, and he has promises from persons in power of much better preferment on his return. Everybody here parted from him with reluctance, for no man was ever more beloved, and in so great esteem with the public from his affable and polite behaviour." Cook's first voyage lasted from 1768 till 1771, and Solander and Banks arrived back safely, although the three artists whom they took with them all died on the voyage.

On their return Solander became Secretary and Librarian to Banks and also Under-Librarian at the British Museum. The "call of the Pacific" was, however, felt by Banks and Solander, and preparations were made by them to accompany Cook on his Second Voyage. On receipt of this intelligence, Linné wrote to Ellis a most prophetic lament, extracts from which are worth reproduction in this connection :—"I have just read . . . . that our friend Solander intends to revisit those new countries. . . . . This report has affected me so much as almost entirely to deprive me of sleep. . . . . Whilst the whole botanical world, like myself, has been looking for the most transcendant benefits to our science . . . . all their matchless and truly astonishing collection . . . . is to be put aside untouched, to be thrust into some corner, to become perhaps the prey of insects and of destruction. . . . . I am under great apprehension that, if the collection should remain untouched till Solander's return, it might share the same lot as Forskal's Arabian specimens at Copenhagen . . . . Solander promised . . . . that he would visit me after his return. If he had brought some of his specimens with him, I could at once have told him what were new . . . . he might have been informed or satisfied upon many subjects. which after my death will not be so easily explained. . . . . Do but consider, my friend, if these treasures are kept back, what may happen to them. They may be devoured by vermin of all kinds. The house where they are lodged may be burnt. Those destined to describe them may die . . . I therefore once more beg, nay I earnestly beseech you, to urge the publication of these new discoveries. I confess it to be my most ardent wish to see this done before I die." Linné's wish, however, was not gratified, as although Solander and Banks did not make the second voyage with Cook they went to Iceland instead. It may here be conceded that it was probably the irresponsibility of Banks overruling the prudence of Solander that completed the desolate tale. For though it is now known that some work was done, little had been effected when Solander was struck down by paralysis and passed away on the 16th of May, 1782.

How fearfully fulfilled was Linne's utterance "Those destined to describe them may die." The specimens "may be devoured by vermin of all kinds": this appears to have happened, as the majority of the forms are absolutely lost. "To be thrust into some corner" was literally the fate of nearly everything connected with the First Voyage.

After Solander's death, Banks does not seem to have taken any interest in the zoological specimens, but apparently allowed Latham to inspect the birds and bird-drawings. As a result, many were described by that great ornithologist, and these have been, in some cases, stumbling-blocks to the systematist, in that Latham did not transcribe the exact localities, and, moreover, did not differentiate the incomplete drawings nor indicate them as such. If Solander's notes were made available to Latham, he did not use them. The Banksian drawings and manuscript passed into the possession of the British Museum, but they were "thrust into some corner." It appears to be an outstanding blot upon that Institution that all the work (scant enough) done in connection with these Banksian drawings and manuscript, with little exception, has been performed gratuitously by amateurs, the only two officials who have attempted any work, that I can trace, being Gray and Sharpe. Kuhl, Temminck, Natterer, Bonaparte, Gould, Salvin, Godman, and Mathews are the chief names associated with the attempts to elucidate the problems surrounding these drawings. Yet, according to the "History of the Collections, British Museum (Natural History)," Solander held the post of Keeper of that Institution.

Through this neglect, the correct appreciation of the Solander names was impossible to extra-London ornithologists, and almost all the errors apparent in Coues's 'Monograph of the Procellariidæ' in 1864-66 are due to this cause.

A study of the literature made it apparent that more manuscript had been available to the earlier students than could now be seen, as these ornithologists quoted names "*ex* Sol. MS." which do not appear on the drawings. Salvin noted this in 1876, and, although it seemed certain that Gray had referred to such a manuscript as recently as 1871, Salvin had to conclude that it had been lost. Through the persistent enquiries by Mr. Mathews, it was, however, discovered that a batch of manuscript carefully put away and labelled as "Copies of the Solander MSS." was not, in fact, copies, but constituted the carefully prepared foolscap matter cleanly made for press purposes. From an examination of this batch, we can deduce the procedure of Banks and Solander to have been somewhat as follows:—Banks appears to have been the collector of the majority: when the specimen was procured it was handed to the artist, who at once made a sketch of it, in some cases painting in the soft parts, in others writing in the colour on the drawing: the locality was also written on the drawing, often in Banks' handwriting; then Solander drew up a detailed description on a little slip of paper, and selected a name for the bird, which was then written on the drawing in pencil, probably at the same time by Solander himself.

Whether the skin was preserved or not I cannot say, but I conclude not. No specimen can be traced, even in literature, which can honestly be said to have been procured on this First Voyage. After their arrival back, Solander certainly worked up the Petrels, making comparisons with the literature, and having the matter on the slips rewritten in clean form on foolscap sheets. It is this rewritten clean batch which Mr. Mathews has traced and which accounts for the missing slips in Solander's book of "Aves" afore-mentioned. After the foolscap pages were prepared, the rough slips seem to have been destroyed. By means of these beautiful diagnoses which Mr. Mathews has reprinted in his 'Birds of Australia' any student of the Procellariiformes can work at Gmelin's species and also read, with reasonable clearness, the monographs of Kuhl, Gould, and Bonaparte. Previously this was quite an impossibility, and in publishing these copies Mr. Mathews has conferred the greatest benefit possible upon the extra-London worker, who can now decide as to the correct attachment of the hitherto enigmatic "Sol. MS." names. Regarding such matters, I always write from the view-point of one who has endeavoured to do lasting work when living at the Antipodes, deprived of much literature and served with scant material. Those who have the wealth of literature and access to the vast collections of the British Museum are apt to overlook such matters, and do not consider how grateful Antipodean workers are for "the scraps that fall from the table." I can also speak with feeling, as some years ago I was confronted with the problem of what was "*Procellaria alba*" Gmelin, which appeared in the synonymy of the Kermadec Petrel. After much trouble and research I arrived at the conclusion that the drawing which served for the basis of that name, and upon which appeared pencilled "*P. sandaliata*," had been prepared from a specimen of *Œstrelata arminjoniana* Giglioli and Salvadori. I then found that Salvin had arrived at the same result, whereas Mr. Mathews' reproduction of the beautiful diagnosis of *Procellaria sandaliata* Solander shews that we were both wrong, and that the bird so named was undoubtedly that afterwards described as *Procellaria incerta* Schlegel, a recognition unguessed at by every previous worker.

I would point out that it is quite possible that other problems regarding obscure birds may be solved by careful study of this newly found manuscript. Mr. Mathews only dealt with that portion covering the Petrels of the Southern Hemisphere, and not with the rest of what had been rediscovered.

A few suggestions and ideas which study of the manuscript compelled, seem to be confirmed by extracts from Banks' Journal. It is much to be regretted that Solander does not seem to have kept a diary, but reference to Banks' Journal appears to shew that he worked very closely with Banks, and that the latter used "we" as including Solander and himself, and also that Banks' "I" just as usually included Solander.

In the first place, I was struck by the fact that no land-birds were described, save such as flew on board the ship. The conclusion is that, primarily, Banks and Solander were botanists, but, as at sea no studies in that science were possible, full attention was given to zoological items. This is borne out by the extract from Banks' Journal, p. 57: "In the first bay we were in I might have shot any quantity of ducks or geese, but would not spare the time from gathering plants . . . . Of plants there were many species, but to speak of them botanically, probably no botanist has ever enjoyed more pleasure in the contemplation of his favourite pursuit than did Dr. Solander and I among these plants."

Mr. Mathews decided that "apparently none of the specimens met with on the first voyage came into the possession of the British Museum." I have stated I could trace none, and I do not think any were preserved. I believe that the descriptions and figures were considered sufficient and that after these were made the birds were *consigned to the pot.* I would again quote Banks' Journal in this connection (p. 63):—"1st Febr., 1769. Killed *Diomedea antarctica, Procellaria lugens* and *turtur.* The first, or Black-billed Albatross, is much like the common one, but differs in being scarce half as large, and having a bill entirely black. *Procellaria lugens,* the Southern Shearwater, differs from the common kind in being smaller and of darker colour on the back, but is easily distinguished by the flight, which is heavy, and by two fasciæ or streaks of white, which are very conspicuous when it flies, under the wings. *Procellaria turtur,* Mother Carey's Dove, is of the Petrel kind, about the size of a Barbary Dove, of a light silvery blue upon the back, which shines beautifully as the bird flies. Its flight is very swift and it remains generally near the surface of the water. More or less of these birds have been seen very often since we left the latitude of Falkland's Island, where in a gale of wind we saw immense quantities of them.

"3rd. Shot *Diomedea exulans,* an Albatross or Alcatrace, much larger than those seen to the northward of the Straits of Le Maire, and often quite white on the back between the wings, though certainly the same species: *D. antarctica,* Lesser Black-billed Albatross: *D. profuga,* Lesser Albatross, with a parti-coloured bill, differing from the last in few things except the bill, the sides of which were yellow with black between them.

"5th. I was well enough to eat part of the Albatrosses shot on the 3rd: they were so good that everybody commended and ate heartily of them, although there was fresh pork upon the table. To dress them, they are skinned overnight, and the carcases soaked in salt water until morning, then parboiled, and the water being thrown away stewed well with very little water, and when sufficiently tender served up with savoury sauce."

The birds mentioned in the preceding notes are included in the drawings and constituted some of the puzzles, especially *P. lugens* and *P. turtur.* These names have ofttimes been quoted from the drawings as of "Banks," but comparison of the above notes and the Solander diagnoses prove that they should be allotted to the latter. Banks' language does not bespeak the ornithologist, whereas Solander's descriptions are monuments of exactitude and have never been excelled, though probably Solander himself would not have claimed to be an ornithologist.

Again quoting from the same place (p. 64):—"15th. Went in the boat and killed *Procellaria velox*, *Nectris munda* and *fuliginosa*, which two last are a new genus between *Procellaria* and *Diomedea*: this we reckon a great acquisition to our bird collection."

It should be observed that here is mention of a "bird collection," but I still think that no collection was preserved and brought home, but that the drawings and descriptions represented the forms collected. It does not seem that skins were prepared at that time, and the few birds brought home by Forster on the Second Voyage were dried and mummified, not skinned.

The introduction of the genus *Nectris* (=*Puffinus*) also suggests that though Solander was such a keen and accurate observer when dealing with the southern Petrels, he had not been a close student of ornithology previously. Solander had collected specimens of the northern *Puffinus* at the beginning of the voyage and had carefully prepared descriptions and differentiated the species, yet did not recognise that they were congeneric with his southern *Nectris*, but included them in *Procellaria*. Yet when he procured *Puffinus carneipes* he placed it in *Nectris*, but added that it was somewhat intermediate between *Nectris* and *Procellaria*. This comment is delightfully accurate, and proves the exceeding care with which he worked at these birds.

The rediscovery of the manuscript, which had been "thrust into some corner" for almost 140 years, has now removed from the name of Solander that unpleasant flavour which always surrounds the maker of numerous perplexing manuscript names. We can now believe that the non-publication of these names was due to Solander's premature death, and that had he lived longer, his work would have been published under his own supervision. In any case, Mr. Mathews' publication of these diagnoses has placed the Solander names in such a position that they can now be fairly dealt with by every student of the Procellariiformes upon their own basis.

VIII.—*Obituary.*

Mr. William Bernhard Tegetmeier.

At the great age of 96 Mr. Tegetmeier died on November 20th last at Golder's Green, near Hampstead. Mr. Tegetmeier was the son of G. C. Tegetmeier, a Hanoverian, who had taken service in the Royal Navy. He was born at Colnbrook, in Buckinghamshire, on November 4th, 1816, and was educated in London for the medical profession, chiefly at University College, where he was a fellow-student with the future Sir William Jenner, Dr. W. B. Carpenter, and Dr. Lankester, all distinguished men of science and all of whom pre-deceased him. At this time his father was practising in St. James' and residing at a house in Bury Street, which belonged to Yarrell, and it was due to his influence that the lad acquired a taste for natural history. Although he never qualified in medicine, his knowledge of anatomy and physiology served him well as a practical breeder and writer on Poultry, Pigeons, and general natural history. Yarrell introduced him to Charles Darwin in 1855, and he was able to be of considerable service to the latter, supplying him with a good deal of material and helping and advising him in his experiments on breeding; the correspondence lasted till 1881. Mr. Francis Darwin, in his 'Life and Letters of Charles Darwin,' writes:—

"My father's letters to Mr. Tegetmeier consist almost entirely of series of questions relating to the various breeds of Fowls, Pigeons, &c. &c., and in reading through the pile of letters it is made clear that Mr. Tegetmeier's knowledge and judgment were completely trusted and highly valued by him."

As everyone knows, Tegetmeier's special subject was the cultivation and breeding of Pigeons, Poultry, and Pheasants, and on this he wrote many practical works, and was probably for many years our leading authority. His reputation as a breeder and fancier caused him to be chosen as a judge at the principal shows, and secured his appointment as poultry-editor of 'The Field,' a position which he held for nearly forty years, only retiring in 1907. During this period he also contributed largely to the natural history columns of the paper, and for many years supplied the leading articles for 'The Queen.'

His membership of the British Ornithologists' Union dates from 1873, and since 1909 he has occupied, with Mr. A. R. Wallace and Col. Godwin-Austen, a place on the list of the Extraordinary Members. Of the Zoological Society he became a Fellow so long ago as 1866, and was promoted to the position of Honorary Fellow in 1905. He was a frequent attendant at the meetings of the B. O. C., and made many interesting exhibits there during the years 1894 to 1900; but latterly he has not been seen so often among us, owing to failing sight and other disqualifications due to increasing old age.

Tegetmeier's tastes were not confined to natural history. He was a collector of rare prints and a discriminating book-buyer. He possessed a very complete collection of the original editions of Shelley, of whose poems he was an enthusiastic admirer. He was also an original member of the Savage Club.

The following is a list of his principal publications on our subject, including one paper which he communicated to 'The Ibis' in 1890 on the domestic races of Fowls:—

(1) The Poultry-Book: containing the Breeding and Management of Profitable and Ornamental Poultry, their Qualities and Characteristics. With illustrations by H. Weir, &c. &c. By W. B. Tegetmeier. Pp. viii & 356; 30 col. pls. London, 1867. 8vo. 2nd edition: London, 1873. 8vo.

(2) Pigeons: their Structure, Varieties, Habits, and Management. With representations of the different varieties by H. Weir. Pp. 188; 16 col. pls. London, 1868. 4to.

(3) The Homing or Carrier Pigeon (Le Pigeon voyageur); its History, General Management, and Method of Training. Pp. 124; 1 pl. London [1871]. 8vo.

(4) Pheasants: their Natural History and Practical Management. Illustrated by T. W. Wood. 1st edition. London, 1873. 4to. 2nd edition, pp. iv+142; 13 pls. London, 1881. 4to.

(5) Reprint of Boddaert's 'Table des Planches enluminéez d'histoire naturelle.' Edited by W. B. Tegetmeier, F.Z.S. London, 1874. 8vo.

(6) Moore's Columbarium. Reprinted from the original edition of 1735, with a brief notice of the Author, by W. B. TEGETMEIER. London, 1879.

(7) The Natural History of the Cranes. A Monograph by the late EDWARD BLYTH, C.M.Z.S. Greatly enlarged, and reprinted, with numerous illustrations, by W. B. TEGETMEIER, F.Z.S. London, 1881. 4to.

(8) The new Game Bird, Pallas's Sand-Grouse: its Natural History, with a Plea for its Preservation. By W. B. TEGETMEIER, F.Z.S. Pp. 23. London, 1888. 8vo.

(9) "On the Principal Modern Breeds of the Domestic Fowl." Ibis, 1890, pp. 304–327; 20 text-figs.

IX.—*Notices of recent Ornithological Publications.*

Balducci on the Sardinian Crow.

[Intorno alla pretesa nuova forma del *Corvus sardus* di Kleinschmidt. Riv. Ital. Ornit. i. 1912, pp. 225–236, tav. i. & ii.]

Signor Balducci has studied the Sardinian Crow which has been separated from that of the mainland, and, after an examination of a large series of both forms, has come to the conclusion that there is no ground for their separation.

Beebe on new Blood-Pheasants.

[New Blood-Pheasants. By C. William Beebe. Zoologica, New York, vol. i. 1912, pp. 189–193.]

When travelling through Yunan, during his recent journey in the East, Mr. Beebe met a Chinaman who had attached to his pack-horse the remains of a Blood-Pheasant. On his return to Europe he found two mounted birds of the same kind in the Muséum d'Histoire Naturelle at Paris, which shewed him that the Yunan bird was undoubtedly a very distinct form. He proposes to call it *Ithaginis kuseri*, after Col. Kuser, for whom he has been conducting his Pheasant researches. The type in Paris was obtained by Prince Henri d'Orléans in 1896. Mr. Beebe also separates the Blood-Pheasant of southern and British Sikkim from that of Nepal and northern Sikkim under the title of *Ithaginis cruentus affinis*.

Beebe on the Yucatan Jay.

[The Undescribed Juvenal Plumage of the Yucatan Jay. By C. William Beebe and Lee S. Crondal. Zoologica, New York, vol. i. 1911, pp. 153–156, 1 pl.]

This paper contains a description of the various plumages of some living specimens of the Yucatan Jay (*Cissilopha yucatanica*), which are (or lately were) living in the Zoological Park, New York. These changes are fully described, and a coloured plate is added of one of them. We do not quite understand why they are called "juvenal" and not "juvenile."

Bickerton on the Terns.

[The Home-life of the Terns or Sea-Swallows photographed and described. By W. Bickerton, F.Z.S., M.B.O.U. Pp. 1–88, 32 plates. London (Witherby): 1912. 8vo. Price 6*s.*]

This work forms one of Messrs. Witherby's "Bird-lovers Home-life Series," and deals with the five species of Terns breeding in the British Islands—the Sandwich, Roseate, Common, Arctic, and Lesser. All the matter is the result of the personal observations of the author, who has spent some five weeks in four different years at Ravenglass in Cumberland, watching and photographing the Sandwich, Common, and Lesser Terns, while his pictures of and notes on the Roseate and Arctic Terns were secured on a group of small rocky islets off the British coast, the exact position of which Mr. Bickerton wisely withholds from his published pages.

At Ravenglass, owing to the strict rules imposed by Lord Muncaster, to whom belongs the tract of sand-hills where the Terns breed, there is every reason to hope that the Sandwich Tern—the rarer species—is increasing, and Mr. Bickerton gives a table of the numbers of eggs recorded by the keeper as having increased from 120 in 1900 to 403 in 1912.

Mr. Bickerton's observations on the varying habits of these species of Tern in regard to nesting-sites, nest-construction, sociability, and other psychological characters, are full of interest, and are told in a charming and direct manner, while his photographs, which are known to many members of the Union, not only illustrate his text and confirm many of his observations, but are works of art in themselves. We must congratulate Mr. Bickerton, as well as the publishers, on this exceedingly artistic work, which is also a valuable record of the study of the life-history of one of the most interesting groups of birds in our avifauna.

Harvie-Brown on the Fulmar.

[The Fulmar: its Past and Present Status in the North Atlantic and in the Northern Parts of Europe and North America, and some Account of its great Increase in Great Britain. By J. A. Harvie-Brown. Zoologist, 1912, pp. 381–388, 401–416, pls. i. & ii.

The Fulmar: its Past and Present Distribution as a Breeding Species in the British Isles. By J. A. Harvie-Brown. Scottish Naturalist, 1912, pp. 97–102, 121–132, pl. iv. map.]

As many of our readers are doubtless aware, the Fulmar has extended its breeding-range and become much more numerous of late years about our northern coasts. In the two papers quoted, Mr. Harvie-Brown has very carefully put together all the records and evidence at his disposal of this extension of range, and has plotted it down on an excellent map, of which two editions are given in the May and June numbers of the 'Scottish Naturalist.'

The Fulmar has been known on St. Kilda for over two hundred and fifty years, but it did not appear at the Faroe Islands until 1839. The earliest date for the Shetlands is 1878, when it commenced to breed on Foula; for the Orkneys 1900, and for the Clomore Cliffs near Cape Wraith 1897; on the Flannan Isles, outliers of the Hebrides, one was observed in 1885, but it was abundant in 1902, while in the past two years (1910 and 1911) it has reached the cliffs of Ulster and Mayo, in Ireland, respectively.

Mr. Harvie-Brown comments on these remarkable facts, and suggests that this extension of breeding-range has been probably caused by "congestion at its more northerly breeding-stations," and draws attention to the relationship between dispersal and migration which, he believes, may throw some light on the latter phenomenon.

Chapman on the Birds of Eastern North America.

[Handbook of Birds of Eastern North America, with Introductory Chapters on the Study of Birds in Nature. By Frank M. Chapman. Pp. xxx+530, 24 pls., 136 text-figs. Revised edition. New York and London (D. Appleton & Company): 1912. Sm. 8vo. Price $3.50.]

This new edition of Mr. Frank Chapman's well-known handbook has been thoroughly revised, and contains several new and valuable features. The introductory portion has been increased to one hundred and sixteen pages, and contains chapters on migration, song, nesting-habits, colour, structure, and food, which may be read with considerable profit. The space given to the description of each bird has not been materially increased, but has been revised, especially as regards nomenclature and distribution. In these matters the last (1910) edition of the B. O. U. Check-list has been closely followed. Other new features are a zone-map of North America, adapted from that of the Biological Survey, and a useful colour-chart.

We can thoroughly recommend this little work, the first edition of which was published so long ago as 1892, as the most useful guide to the study and identification of North American birds.

Chapman on a new Ibis.

[A new Ibis from Mt. Kenia, British East Africa. By Frank M. Chapman. Bull. Amer. Mus. Nat. Hist. xxxi. 1912, pp. 235–238, pls. xxiii., xxiv.]

Mr. Chapman describes an interesting new Ibis resembling in a general way *Hagedashia hagedash*, but which differs in having a very distinct nape-crest of rounded feathers and the orbital and loreal space bare of feathers. For this he proposes the name *Oreoibis akleyorum*, gen. et sp. nov.

The bird was discovered and obtained by the well-known American taxidermist Mr. C. E. Akeley, who, with his wife, has been recently collecting in various parts of British East Africa. The examples obtained were met with on the southern slopes of Mt. Kenia, at an altitude of about 9000 feet. while other specimens were observed at similar altitudes on Mt. Elgon and in the Aberdare mountains. The species appears to be confined to higher altitudes, and takes the place of *Hagedashia*, which does not range above 6000 feet. Mrs. Akeley found a nest containing three nestlings and a fragment of an egg-shell on the same occasion, all of which specimens are now in the American Museum of Natural History in New York.

Eagle Clarke on Migration.

[Studies in Bird-Migration. By William Eagle Clarke. With maps, charts, and other illustrations. Vol. i. pp. xvi+323; vol. ii. pp. viii+346. London (Gurney & Jackson), 1912. 8vo.]

Mr. Clarke is peculiarly well qualified to write on the migration of birds, for he has made the closest study of the subject for some thirty years, and in 1903 prepared the digests of the several annual Reports of the Migration Committee of the British Association, of which he became a member in 1883. While engaged upon this task he found that a much greater number of observations than had been already made were necessary for safe generalizations, and he therefore decided to devote his spare time to visiting those excellent observation-stations which Great Britain, from her geographical position, possesses in abundance. After a somewhat unlucky trip to Ushant in 1898, Mr. Clarke obtained leave to pass a month on the Eddystone in September and October 1901, to study the cross Channel migration. At the same period of 1903 he spent a month on the 'Kentish Knock' Lightship, corroborating and enlarging upon his Eddystone experiences, and viewing the extraordinary east to west movements across the North Sea. In 1904 the Flannan Isles, to the west of the Hebrides, were chosen for observation-purposes, while Sule Skerry, to the north-west of Orkney, was visited for a few hours during the voyage home. The year 1905, however, provided the greatest success, when Fair Isle, between Shetland and Orkney, was visited: for not only were a marvellous number of rare species proved to touch there on passage in autumn, but several occurred that were new to the British and Scottish lists. Accounts of this expedition and others subsequently undertaken are given at length in three chapters. Two others are devoted to St. Kilda, the scene of Mr. Clarke's labours in the autumn of 1910 and 1911, where the results were but little less successful than in Fair Isle. The author hopes to obtain further details as to the spring migration, through George Stout, a native of the island last mentioned, who has supplied many excellent notes, after being trained for the purpose.

The whole book is replete with information on British Migration—for the studies chiefly refer to our islands—and a great deal may be learnt from it, as to the course taken by the birds on their journeys to and from our shores, as well as on the most suitable weather. In the chapter on Meteorological Conditions this is fully discussed, with charts verified by Dr. Shaw at the Meteorological Office. Birds appear to start about 7 P.M., the winds between south and east being the most favourable, and those between west and north comparatively unfavourable: the actual direction of the wind is not a matter of great importance, it is rather the type of weather which accompanies it at the starting-point that tells. In the favourable anticyclones fogs are common, and then the Lights act as decoys; in clear weather little is seen of the birds. High winds are naturally adverse, while the temperature is important.

The earlier chapters are devoted to the causes of migration and the ancient and modern ideas on the subject, while others discuss the routes usually taken, and give charts of lines of flight. Eight are devoted to individual species, the Swallow, the Fieldfare, the White Wagtail, the Song-Thrush, the Skylark, the Lapwing, the Starling, and the Rook; and these, which are reprinted from the British Association Reports, have been carefully revised and largely supplemented.

Coward on Migration.

[The Migration of Birds. By T. A. Coward. Pp. x+138. Cambridge (University Press), 1912. 8vo. Price 1s.]

The present forms one of the volumes of the Cambridge Manuals of Science and Literature, edited by Dr. P. Giles and Prof. Seward. It is a reasonable little book, and does not attempt to introduce any new theories on the cause of migration. Mr. Coward considers that fluctuating food-supply, love of home, sexual impulses, desire for light, and varying temperature have all been factors in the migration impulse. There are chapters on routes, on the speed of migrants' flight and the effects of wind and weather, and on early ideas and the history of the investigations. The book contains, in fact, a good summary of our present knowledge of this still mysterious problem.

Hellmayr on Zonotrichia strigiceps.

[Bemerkungen ueber eine wenig bekannte neotropische Ammer (*Zonotrichia strigiceps*). Von C. E. Hellmayr. Verh. Orn. Ges. in Bayern, xi. 2 Heft (1912).]

The author writes a short history of *Zonotrichia strigiceps*, a rare South-American Finch, originally discovered by Darwin and described by Gould. He also describes an allied form as belonging to a new subspecies, and names it *Zonotrichia strigiceps dabbenei*. It is from the mountains of north-western Argentina.

Hellmayr and v. Seilern on Venezuelan Birds.

[Beiträge zur Ornithologie von Venezuela. Von C. E. Hellmayr and J. Graf von Seilern. Arch. f. Naturgesch. vol. lxxviii. Abt. A, Heft 5, 1912, pp. 34–166.]

This paper is based on a collection of about 1200 skins made by an American traveller, Mr. S. M. Klages, in 1909 and 1910 in northern Venezuela. The authors refer them to 171 species. They add the names of about twenty other species that have been recorded as Venezuelan.

The new subspecies described are *Tangara* (scribe *Calliste*) *guttata bogotensis*, *Myiodynastes chrysocephalus venezuelanus*, *Pseudocolaptes boissoneauti striaticeps*, *Sittasomus griseus virescens*, *Psammoplex brunnescens rostratus*, and *Drymophila caudata klagesi*.

The work appears to have been most carefully done, as is the case with other articles by Herr Hellmayr, but we protest against his practice of adding the names of authors to synonyms which they never quoted—e. g., "*Basileuterus tristriatus meridanus* Sharpe" (*op. cit.* p. 47). Sharpe detested trinomials and never used them. He called them "destructive," and he was not far from right! In the present paper most of the species have three names, and, including the authority, four. What has become of the "binomial" system?

Hennicke on Bird-protection.

[Vogelschutzbuch von Dr. Carl B. Hennicke. Mit 8 Taf. und 60 Abbild. im Text: pp. vi+126. Stuttgart (Strecker u. Schröder) [1912]. 8vo.]

This little work, which forms one of a series known as the "Naturwissenschaftliche Wegweiser," deals with a subject which has made much progress in Germany of late years. After two short chapters on the æsthetic and economic bases for bird-protection, follow more practical directions for attaining this object by tree- and shrub-planting, winter feeding, providing nest-boxes, and other methods, and, finally, a résumé of the legislative enactments for bird-protection in the principal European countries. Most of the methods recommended are based on those of Freiherr von Berlepsch.

Hopkinson on the Birds of the Gambia.

[The Gambia, its History, Ancient, Mediæval, and Modern, together with its Geographical, Geological, and Ethnographical Conditions, and a Description of the Birds, Beasts, and Fishes found therein. By Henry Fenwick Reeve, C.M.G. 1 vol., 4to. London (Smith & Elder), 1912.]

This is a volume on the little-known English territory of "The Gambia," on the west coast of Africa, and will be very useful to anyone going to that Colony or interested in its welfare.

It contains, as will be seen by its title, information on a considerable number of subjects, and amongst others a chapter on the Birds (part iii. pp. 210–233) prepared by Dr. Hopkinson, D.S.O. Their correct scientific names are given in most cases, and a few short notes on their habits.

See on this subject Rendall, Ibis, 1892, p. 215.

Hørring on the Birds observed at Danish Lighthouses.

[Fuglene ved de danske Fyr i 1911. 29de Aarsberetning om danske Fugle. Ved R. Hørring. Med. et Kort. Vidensk. Meddel. fra den naturh. Foren. i Kbhvn. Bd. 64, 1912: pp. 141-209.]

This report, which has been for so many years prepared by Mr. H. Winge, now appears under the authorship of Mr. Hørring. It follows the lines of previous reports in giving:—(1) A list of birds in systematic order, with the dates when, and lights where, they were observed. (2) A list of birds according to the dates of their appearance, and with a weather report from each lighthouse or ship.

Hull on the Birds of Lord Howe and Norfolk Islands.

[The Birds of Lord Howe and Norfolk Islands. By A. F. Basset Hull. Proc. Linn. Soc. N.S.W. vol. xxxiv. 1910, pp. 636-693, 5 pls.]

Although there have been many references to these two islands and their birds in Australian ornithological literature and elsewhere, no complete account of their Avifauna has been published, and Mr. Hull, who has himself visited both islands, is quite right in supposing that such an account would be acceptable.

After a short history of the previous literature on the subject and some remarks on the physical formation of the two islands, the author gives a tabular list of all the species that, to the best of his belief, actually breed upon them. These are about thirty in number, about half of them being marine birds. The general list that follows contains the names of seventy-nine species, arranged according to Mathews' 'Hand-list,' and many interesting field-notes. *Aplonis fuscus*, allied to the mainland genus *Calornis*, is found in both islands, but not elsewhere. The Avifauna, as a whole, is a mixture of Australian and New Zealand species, with some endemic forms in each island. *Merula vinitincta* is a "very common and exceedingly tame species," peculiar to Lord Howe Island, and represented in Norfolk Island by an allied form *M. fuliginosa*. Five plates of eggs illustrate this useful paper.

Mathews on Australian Birds.

[The Birds of Australia. By Gregory M. Mathews. Vol. ii. pts. 3 and 4, pp. 237–476, pls. 95–120. London (Witherby & Co.), 1912. 4to.]

Mr. Mathews sends us two solid instalments of the above-mentioned work, which take us to the end of the Procellariiformes and into the Lariformes. Whatever opinions may be formed as to the validity of the specific or subspecific forms recognised, there can be no question as to the immense amount of information now laid before us, and future writers, in consequence, will now find it a much easier task to discuss the Petrels of the World, especially after comparing the author's views with those of Dr. Godman in his great Monograph. Solander's excellent descriptions are in many cases a considerable help in determining the nomenclature, while Mr. Mathews's 'Austral Avian Record' and his papers in 'Novitates Zoologicæ,' vols. xvii. and xviii. should also be consulted. Attention may be more particularly drawn to the discussion of the genera in the present book, and to the differences of the bills in the Albatrosses, of which good woodcuts are given in illustration. The genera accepted are *Diomedea*, *Phœbastria*, *Thalassarche*, *Thalassogeron*, and *Phœbetria*, while *D. epomophora* of Lesson replaces *D. regia* of Buller, and *Phœbetria palpebrata* of Forster is used for *P. fuliginosa* of Gmelin.

Under the head of Lariformes we observe that *Hydrochelidon* is rightly retained in place of *Chlidonias* of Rafinesque, published only in a newspaper called the 'Kentucky Gazette'; *Gelochelidon* is accepted for our Gull-billed Tern, though the specific name *anglica* is changed to *nilotica*, and the Caspian Tern stands as *Hydroprogne tschegrava*. In the genus *Sterna*, *S. sumatrana* replaces *S. melanauchen*, shown to be the adult of the same species, and the Australian form is differentiated as *S. s. kempi*, while the author's own *S. s. incerta* is sunk in favour of *S. s. melanorhyncha*. *Thalasseus* is utilized for the whole of the *S. bergii* group of forms, while *S. media* of Horsfield is found to be preoccupied and the name *T. bengalensis torresii* substituted.

Sternula is used for the Least Terns, *Onychoprion* for the

Sooty Terns, the young of which differ remarkably from those of *Sterna*; similarly *Melanosterna* is adopted as a genus for *S. anæstheta* auct., which also exhibits peculiar changes of plumage, as does the "Brown-winged Tern," now denominated *fuscatus* instead of *fuliginosus*. Careful attention has been given to the Noddy Terns, and the most modern account is given of the curious breeding-habits of *Gygis*. Finally, woodcuts are inserted to illustrate the pattern of the wing-feathers in *Bruchigavia*, the name adopted for the Australian "Silver Gull."

Four new generic terms are proposed:—*Nealbatrus* for *Thalassogeron chlororhynchus*, *Diomedella* for *T. cautus*, *Gygisterna* for *Sterna sumatrana*, and *Anousella* for *Anous leucocapillus*, two of these names being of a somewhat hybrid character. *Megalopterus* of Boie is also preferred to *Micranous*, and his specific title *minutus* to *leucocapillus* of Gould.

No less than thirty new subspecies are proposed:—*Pelecanoides urinatrix coppingeri*, *P. garnoti lessoni*, *P. g. magellani*, *Diomedea exulans rothschildi*, *D. epomophora maccormicki* (=*regia* Buller), *Thalassarche melanophris impavida*, *T. m. belcheri*, *T. m. richmondi*, *Thalassogeron chrysostoma harterti*, *Phœbetria palpebrata huttoni*, *P. fusca campbelli*, *Hydrochelidon leucopareia leggei*, *H. l. delalandii*, *H. l. swinhoei*, *Gelochelidon nilotica addenda*, *G. n. grönvoldi*, *Thalasseus bergii bakeri*, *T. b. edwardsi*, *T. bengalensis arabicus*, *Sterna dougalli bangsi*, *S. d. arideensis*, *Sternula nereis exsul*, *Melanosterna anæthetus recognita*, *Anous stolidus gilberti*, *Megalopterus minutus americanus*, *M. m. atlanticus*, *Procelsterna cerulea nebouxi*, *P. c. imitatrix*, *Gygis alba royana*, *G. a. monte*, and *Bruchigavia novæ-hollandiæ forsteri*.

Morse on the Birds of Eastern Massachusetts.

[A Pocket-list of the Birds of Eastern Massachusetts, with special reference to Essex County. By Alfred P. Morse. Published by the Peabody Academy of Science, Salem, Mass. 1912. 94 pp. Sm. 8vo.]

This little handbook has been prepared at the request of the Museum Committee of the Peabody Academy of Science, with the intention of encouraging a legitimate popular interest in the bird-life of the neighbourhood of Salem, and also as a guide to the collections in the Museum at the same place. The list contains 390 species and subspecies; of these, three—the Great Auk, the Labrador Duck, and the Passenger Pigeon—are undoubtedly extinct; of the others, 280 are species of regular occurrence. The list is printed on one side of the page, and there is a photographic plate of Egg Rock, near Nahant, the nesting-site of several species of Terns.

Moulton on the Sarawak Museum.

[Ninth Report of the Sarawak Museum, 1910. By J. C. Moulton, Curator. 45 pp. 8vo.]

A good account is here given of the progress of the Sarawak Museum in Borneo, which is kept up mainly, we believe, by the liberality of H.H. Rájah Brooke. It has been prepared by the Curator, Mr. J. C. Moulton.

In the Appendix is given a complete list of the 416 Bornean birds represented in the Sarawak Museum. Among these, we observe, are sixteen specimens of the rare and peculiar Bornean type *Pityriasis gymnocephala* and two examples of the fine Pheasant *Lobiophasis bulweri*.

Oberholser on the Subspecies of Butorides virescens.

[A Revision of the Subspecies of the Green Heron, *Butorides virescens*. By Harry C. Oberholser. Proc. U.S. Nat. Museum, vol. xlii. 1912, pp. 529–577.]

The author, after examining a large series of the widely spread Green Heron of America (*Butorides virescens*), divides the species into seventeen subspecies, and gives full descriptions of all of them, adding other particulars as to their variation and distribution. The following subspecies are now newly described:—*B. v. eremonomus*, *B. v. mesatus*, *B. v. hypernotius*, *B. v. cubanus*, *B. v. christophorensis*, *B. v. dominicanus*, *B. v. lucianus*, *B. v. barbadensis*, *B. v. granadensis*, *B. v. tobagensis*, and *B. v. curacensis*.

Oliver on the Birds of Lord Howe, Norfolk, and the Kermadec Islands.

[Geographic Relationships of the Birds of Lord Howe, Norfolk, and the Kermadec Islands. By W. R. B. Oliver. Trans. New Zealand Inst. vol. xliv. 1912, pp. 214–221.]

All Oceanic Islands are of great importance as regards their birds, particularly as to those birds that are resident and nesting in them, and the three island-groups studied in the present paper are of much interest. But the results arrived at are somewhat meagre, and there is little information given as to the evidence upon which they are based. The tables supplied consist of merely the names of the species.

Van Oort on Birds from the Dutch Indies.

[List of a Collection of Birds from Western Java and Krakatau. By Dr. E. D. van Oort. Notes Leyden Museum, xxvii. 1910, pp. 106–166.

An undescribed form of *Microglossus aterrimus.* Ibid. xxxiii. 1911, pp. 239–240.

One small Collection of Birds from Mount Tengger, East Java. Ibid. xxxiv. 1912, pp. 44–50.

Endynamis minima, an apparently new Cuckoo from South-western New Guinea. Ibid. xxxiv. 1912, p. 54.

On some new or rare Birds from Sumatra, Java, Ceram, and the Poeloe Toedjoe group north of Ceram. Ibid. xxxiv. 1912, pp. 59–65.]

The first of these papers contains an account of about 800 specimens obtained by Mr. Edward Jacobson in various localities in Java, as well as in the island of Krakatau. Mr. Jacobson made some interesting observations on the re-stocking of that island after the great irruption, when the whole of the fauna and flora were practically wiped out. No new species are described in the paper.

In the second paper a new black Cockatoo is described from Humboldt Bay, on the north-west coast of New Guinea, under the name of *Microglossus aterrimus stenolophus.*

The third paper contains a list of a further collection of birds from eastern Java, in which is described a new subspecies, *Crocopsis bimaculatus tenggerensis.*

The last paper on the list deals with some rare and some new species collected by Baron van Dedem, who, with his wife, recently made a tour through the Dutch Indies. They obtained a fine and distinct new Woodpecker (*Gecinus dedemi*) on the slopes of the Volcano Sibajak in northern Sumatra, at an elevation of 1450 metres, a new Flycatcher (*Rhipidura dedemi*) and a new Swift (*Collocalia ceramensis*) from Ceram, while several other birds are described as "nov. form."!—but what this means exactly we cannot make out.

Schaub on the Nest-down of Birds.

[Die Nestdunen der Vögel und ihre Bedeutung für die Phylogenie der Feder. Von S. Schaub. Verhandl. naturf. Ges. Basel, xxiii. 1912.]

In this paper the author combats the views of Mr. Pycraft and endeavours to uphold those of Gadow. He believes that the first or neoptile plumage is always developed from the same papilla, and in direct continuity with the second down or deuteroptile and the definitive feather or teleoptile, and it is not possible to consider the three successive feather-coverings as separate generations, and further that the neoptile is not primitive, but a secondary development, and cannot be used to trace the connection between reptilian scales and definite feathers.

Sclater on the Ornithological Literature of 1911.

[Zoological Record, vol. xviii. Aves. By W. L. Sclater, M.A. London, October 1912. Pp. 115.]

The Report on 'Aves' from the volume of the Zoological Record for the year 1911 is by the same author as the preceding Record (for 1910), and follows nearly the same plan. The list of titles of zoological works and papers with which it commences, contains 1536 entries, the corresponding number for 1910 being 1721. The systematic arrangement followed is, as in the last report, that of the late Dr. Bowdler Sharpe.

Of the 1536 publications listed Germany claims 341, Great Britain 322, United States 316, France 137, Russia 112, Italy 35, British India 31, Austria 27, Hungary 24, Switzerland 21, Sweden 19, Denmark 17, Holland 16, South Africa and Finland 11 each, Canada and Belgium 7 each, the Philippine Islands 4, Norway, Japan, the Malay Peninsula, British East Africa, Cuba, and the Argentine 3 each, Portugal and Poland 2 each, Luxembourg, Roumania, Egypt, New Zealand, Brazil, Chile, Mexico, Barbados, and British Guiana each one only.

Shelley on African Birds.

[The Birds of Africa, comprising all the Species which occur in the Ethiopian Region. By G. E. Shelley. Completed and edited by W. L. Sclater. Vol. v. pt. ii. pp. viii and 165–502, pls. l–lvii. London (Sotheran & Co.), 1912. 8vo.]

Captain Shelley's well-known work on the 'Birds of Africa' was left unfinished at his death, but, fortunately, the manuscript and some proof-sheets were handed over to Mr. W. L. Sclater, whose experience of the avifauna of that continent qualifies him admirably for the task of editor. He has supplied certain descriptions which were lacking, and has revised the whole in the light of the discoveries of the last six years. The present instalment is devoted to the group *Lanii*, which is subdivided in a somewhat unusual way—chiefly by the habits of the members, though partly by the colour of the young and other characteristics. In some cases the key of the genus requires both male and female to be examined in order to determine the species, a method of which we can hardly approve. But, no doubt, the present Editor will not follow the same course.

The families admitted are *Dicruridæ*, *Vangidæ* (Madagascar and Great Comoro only), *Campophagidæ*, *Laniidæ* (with subfamilies *Laniinæ* and *Laniariinæ*), and *Prionopidæ* (with subfamilies *Nilainæ* and *Prionopinæ*). Of these the first and third are usually considered less closely connected with the Shrikes than Captain Shelley believed.

Much space is devoted to a consideration of the ranges of the various forms, and this is of undoubted utility in forming a decision as to the validity of the species or subspecies, not to mention races; the author refuses to recognise a fair number named by earlier authorities, and reduces others from species to subspecies; but for these our readers must consult the pages themselves. The accounts of the habits, nests, and eggs are, moreover, full and interesting. We notice, among other details, that *Phoneus* is accepted as a generic title for the Woodchat group, *Tchagra* of Lesson for *Telephonus* of Swainson, *Telophorus* of Swainson for *Pelicinius* of Boie, while the *Vanga* of South Madagascar is elevated to specific rank as *V. griseipectus*, sp. n.

Eight excellent plates have been drawn by Grönvold for this part.

Waterhouse on new Generic Names.

[Index Zoologicus, No. II., compiled for the Zoological Society of London by Charles Owen Waterhouse, I.S.O., and edited by David Sharp, M.A., F.R.S. Pp. vi+324. London (Zoological Society), 1912. 8vo.]

This laborious but useful compilation contains a complete list of names of new genera and subgenera proposed for use in Zoology for the years 1901-1910 inclusive: the greater number of these are to be found in the annual volumes of the 'Zoological Record' and the 'International Catalogue of Scientific Literature,' now happily one so far as Zoology is concerned. There are also included names which have escaped the hawk-like eyes of the Recorders, and others which have been accidentally omitted from previous "nomenclators."

The editor reckons that up to the end of 1910 some 140,000 names for genera have been used in Zoology. It is very evident that great care must be taken by those naturalists who are proposing new generic names not to trespass on the 140,000 names already used, and it is therefore highly desirable that such a list as this should be issued from time to time. We may add that the price of the work is 15*s.* to the public and 12*s.* 6*d.* to Fellows of the Zoological Society, at whose expense the volume is published.

Other Ornithological Publications received.

Bryant, H. C. Birds in relation to a Grasshopper outbreak in California. (Cal. Univ. Pub., Zool. Vol. ii. No. 1, Nov. 1912.)

——— The present and future status of the Californian Valley Quail. (Condor, July 1912.)

Coburn, F. Blue-winged Teal (*Querquedula discors*) breeding in North Iceland. (Zoologist, Sept. 1912.)

Galsworthy, John. For Love of Beasts. (Animals' Friend Pamphlet, 1912.)

Hellmayr, C. E. Zoologische Ergebnisse einer Reise in das Mundsgebiet des Amazonas herausgegeben von Lorenz Miller.—II. Vögel. (München, 1912.)

Horsbrugh, Major Boyd. The Game-Birds and Water-Fowl of South Africa. Parts 3, 4. (London, 1912.)

Laurie, D. F. Poultry Foods and Feeding. (London, 1912.)

Loudon, Baron H. Le bagueage des oiseaux. [Russian.] (Moscow, 1912.)

Menzbier, M. A. Zoogeographischer Atlas. (Moskau, 1912.)

Miller, W. DeW. A Revision of the Classification of the Kingfishers. (Bull. Amer. Mus. Nat. Hist. Vol. xxxi., 1912.)

Mitchell, P. Chalmers. The Childhood of Animals. (London, 1912.)

Oberholser, H. C. Descriptions of 104 new species and subspecies of Birds from the Barussan Islands and Sumatra. (Smiths. Misc. Coll. Vol. lx. No. 7, 1911.)

Report on the Immigrations of Summer Residents in the Spring of 1911. (Bull. B. O. C. Vol. xxx., Nov. 1912.)

Salvadori, T. Secondo Contributo all' Ornitologia del Congo. (Ann. Mus. Civ. di Storia Nat. Genova, October 1912.)

Sarudny, N. & Härms, M. Bemerkungen über einige Vögeln Persiens. (Journ. f. Ornith., October 1912.)

Schenk, J. Das Experiment in der Vogelzugsforschung. (Bericht V. Int. Orn.-Kong. Berlin, 1910.)

Thayer, A. H. Concealing Coloration, an answer to Theodore Roosevelt. (Bull. Amer. Mus. Nat. Hist. Vol. xxxi., 1912.)

Avicultural Magazine. (3rd Series, Vol. iii. Nos. 11, 12; Vol. iv. Nos. 1–3, 1912.)

Bird Lore. (Vol. xiv. No. 6, 1912.)

Bird Notes. (New Series, Vol. iii. Nos. 9–12, 1912.)

British Birds. (Vol. vi. Nos. 6–8, 1912.)

Bulletin de la Société Zoologique de Genève. (Tome i. Fasc. 17–19, 1912.)

Club van Nederlandsche Vogelkundigen. Jaarbericht. (No. 2. Deventer, 1912.)

The Condor. (Vol. xiv. Nos. 5, 6, 1912.)
The Emu. (Vol. xii. pt. 2, 1912.)
Messager Ornithologique. (Moscow) (Nos. 3, 4, 1912.)
The Scottish Naturalist. (Nos. 11–13, 1912.)
Zoological Society Bulletin, New York. (November 1912.)
Zoologischer Anzeiger. (Bd. xl. Nr. 10–13; xli. Nr. 1–4, 1912.)

X.—*Letters, Extracts, and Notes.*

We have received the following letters addressed "to the Editor":—

Sir,—Mr. W. P. Lowe's most interesting account of the Gannets (*Sula capensis* Licht.) on Ichabo Island ('Ibis,' 1912, p. 263), has induced me to make some further enquiries, and I learn from Mr. Müller, H.B.M. Consul, that they are as numerous as ever, covering the whole island.

He writes, under date of October 2nd:—

"The men's quarters have had to be fenced off to keep the birds away, and they had to expedite the loading of the last lot of guano collected, as the birds returning to nest began laying upon the stacks. Various attempts have been made to estimate the numbers of the Malagas. . . . ."

It seems possible that there are more Gannets on Ichabo than on the celebrated Bird Island in Algoa Bay.

I am, Sir,
Yours &c.,
J. H. Gurney.

Keswick Hall,
Norwich.

Sir,—In the October number of 'The Ibis' I had occasion to figure the male and female of the Blue Chaffinch of Gran Canaria (*Fringilla teydea polatzeki*). May I be permitted to point out the discrepancies between the original painting and the reproductions (Plate xii.), which are so marked as to take away to a large degree from the value of the plate. In fairness to the artist—H. Grönvold—I should like to draw attention to the fact that the original painting was an *exact* representation of the species in question: much trouble was taken to get the colour identical with that of the living bird, and the completed plate was correct in the smallest detail. The reproduction of this plate in 'The Ibis' is so much darker than in the original painting, that it might almost portray a different species. This is especially apparent in the figuring of the male, for it takes away two of the characters of this subspecies which I wished to bring out, *e. g.*, the ashy olive-grey back, and the pronounced narrow black frontal band.

Another point of some importance which has been overlooked is the narrow white upper and lower eyelid, constituting an almost complete ophthalmic ring.

I am, Sir,
Yours &c.,
DAVID A. BANNERMAN.

The Orchard, Kings Langley,
October 23rd, 1912.

The Report of the British Museum for 1911.—In obedience to an Order of the House of Commons, dated February 22nd, 1912, the usual annual report on the British Museum and its work in the year 1911 was issued last year, but not quite in time to allow it to be noticed in our October number. The report is full of interest, as is always the case, to workers in science of every department, but there is still room for some advantageous alterations. For instance, a list of the scientific staff and the functions which they fill would be of much interest, as would also be a list of the trustees of this important institution.

The following works in connection with the collection of birds have been executed during the year 1911:—

The remounting of the series of birds in the general gallery has been continued, and the old and faded specimens of the Families Dendrocolaptidæ, Cotingidæ, and Pipridæ have been replaced by finely mounted examples.

The rearrangement and relabelling of the Gould collection of Humming-Birds has been continued.

The preparation of the fifth volume of the "'Catalogue of the Collection of Birds' Eggs,'' by Mr. W. R. Ogilvie-Grant, has been completed, and will be issued shortly.

Lists of birds believed to require protection in certain British Colonies and Protectorates have been prepared for the information of the Colonial Office.

The collection of skins in cabinets has been carefully examined, drawer by drawer, or box by box, to ascertain if there is any trace of moth or beetle among them. About half the cabinets have been inspected in this way, and camphor has been placed in each drawer.

Great assistance has been received from Mr. David A. Bannerman, who has been engaged in working out various collections, in labelling a number of old collections, and in preparing them for incorporation.

The Committee appointed by the Secretary of State for the Colonies to inquire into the question of the destruction of plumage birds—including Mr. C. E. Fagan, Dr. Harmer, and Mr. W. R. Ogilvie-Grant, to represent the Museum—have completed their investigations, but have not yet issued their report.

Amongst the publications of the Museum relating to birds was the General Index to the late Dr. Sharpe's 'Handlist of the Genera and Species of Birds,' which will be of very great use to working naturalists. The first volume of this work was published in 1899, and the fifth in 1909. The General Index, containing 199 pages, was issued in 1912, and completed the work. Mr. Ogilvie-Grant (the Editor) tells us in his preface that his chief attendant, Mr. Thomas Wells, was of great assistance to him in this laborious task.

Among the more important collections presented to the Natural History Museum in 1911 were:—(1) The specimens obtained by the British Ornithologists' Union's Expedition to New Guinea. The large series of birdskins is of great zoological importance, and form a gift, the value of which can scarcely be over estimated. (2) The magnificent collection of African Birds formed by the late Mr. Boyd Alexander, during his various expeditions, and given in accordance with his wish to the Trustees, has been handed over by his executors. It includes the types of 84 species described by him, and numbers in all 4798 specimens. (3) From Captain E. C. Hardy, R.N., has been received a valuable collection of Birds made by Mr. Willoughby P. Lowe, who accompanied H.M.S. 'Mutine' as naturalist. Captain Hardy was engaged in carrying out a magnetic survey from the Cape of Good Hope to Sierra Leone, and invited Mr. Lowe to join him as his guest for the purpose of collecting specimens for the Natural History Museum. (4) Mr. G. Blaine has contributed a valuable collection of birds formed during his travels in Equatorial Africa. (5) A large series of Grouse, Black Game, and Ptarmigan, including many interesting phases of plumage and valuable varieties, has been presented by the Grouse Disease Inquiry Committee.

The total number of acquisitions in the class of birds (including the five special donations just mentioned) was 10,819. Of these the most noteworthy were as follows:—

(1) Two hundred and seventy-six birds from Ireland; presented by Mr. W. R. Ogilvie-Grant. (2) Five examples of the Irish Jay, *Garrulus hibernicus*, from Co. Waterford, new to the collection, presented by Count de la Poer. (3) Two Lammergeiers and a Turkey Vulture, presented by the Zoological Society of London. (4) Two nestling Marsh Harriers from the Camargue, presented by Mr. Collingwood Ingram. (5) Six specimens of species of *Paradoxornis* from China, presented by Commander H. Lynes. (6) Twenty-two birds from Sze-chwan, Western China, presented by His Grace the Duke of Bedford. (7) Two hundred and forty-four birds from Central Asia, collected by Mr. Douglas Carruthers. (8) Thirty-seven birds from Formosa, collected by Dr. A. Moltrecht. (9) Three hundred and thirty-seven birds from the Island of Palawan, collected by Mr. Willoughby P. Lowe. (10) The type specimens of *Tarsiger elgonensis* and *Irrisor granti*, from British East Africa, both new to the collection, presented by Mr. F. J. Jackson, C.B., C.M.G. (11) Nine birds from Equatorial Africa, six species being new to the collection, received in

exchange from the Berlin Museum. (12) One hundred and seventy-three birds from East Africa, collected by Mr. Robin Kemp. (13) One hundred and forty-one birds from Central Africa, presented by Mr. Sheffield A. Neave. (14) Fifty-three birds from Entebbe, Uganda, presented by Mr. C. C. Gowdey. (15) An example of the rare Scops Owl (*Gymnoscops insularis*), from the Seychelles, presented by Mr. H. P. Thomasset. (16) Four specimens of the Black Bustard, *Lissotis afra*, from Bechuanaland, presented by Mr. R. E. Dent. (17) Three hundred and six eggs from northern Ankole, collected by Dr. R. A. L. van Someren. (18) Twenty-three birds from the district south of Lake George, including the type of *Laniarius mufumbiri*, presented by Mrs. M. Roby. (19) A nestling Ostrich, presented by Herr Carl Hagenbeck. (20) Sixteen birds, including the type of *Himantornis whitesidei*, and one egg from the Congo Region, collected by the Rev. H. M. Whiteside. (21) Nine birds from Cameroon, including six types of newly-described species, and seventy-two eggs (nearly all of which were not previously represented in the collection), presented by Mr. G. L. Bates. (22) Five hundred and thirty birds and one hundred and eleven skeletons from Cameroon, collected by Mr. G. L. Bates. (23) The type specimen of Wells's Wagtail, *Motacilla wellsi*, from Upper Nigeria, presented by Mr. T. V. Fox. (24) An example of Mantou's Bird-of-Paradise, *Heteroptilorhis mantoui*, new to the collection. (25) An egg of the Greater Bird-of-Paradise, *Paradisea apoda*, presented by Mrs. E. J. Johnstone. (26) An example of the extinct Passenger Pigeon, *Ectopistes migratorius*, from Kingston, Canada, presented by Mrs. Oliver. (27) Two hundred and twenty-four birds, sixty-eight eggs, and fifteen nests from Tamuco, southern Chile, including examples of a new species, *Upucerthia tamucoensis*, and eggs which were previously unrepresented, collected by Señor A. Soldaña. (28) Thirty-four birds from Entrerios, presented by Lady Jackson. (29) One hundred and twenty birds from British Guiana, presented by the Royal Artillery Institution, Woolwich.

Rearrangement of the Collection of Birdskins in the Natural History Museum.—For a period of about six weeks, from the 15th of August to the 27th of September last, the Bird room was closed to visitors for the purpose of rearranging the birdskins in the cabinets to make room for the many additions which have accumulated during recent years, but which have not been able to be incorporated owing to the crowded state of the cabinets.

The number of incorporated specimens to be dealt with, amounting to 700,000 skins and formerly occupying 320 cabinets, have been spread over the 379 cabinets now available. The extra cabinets utilised include forty-four of the old type, placed in the passage connecting the two Bird-rooms, and eleven smaller top cabinets of a new type, specially designed to accommodate the larger birds of prey and Vultures.

In order to bring this about every drawer, except those containing the Ducks, which had been already rearranged, had to be shifted, and the labour of doing this has been very considerable. The result, however, is eminently satisfactory, and now for the first time for years there is ample room, not only for the present vast collection, but for any specimens likely to be added for many years to come.

In January 1910 it was found that a large number of collections, amounting altogether to about 70,000 specimens, were unnamed. Since that date nearly all of these have been registered, named, and labelled, and, so far as possible, reports concerning them have been published. The birds contained in these collections are now being gradually incorporated in their proper places, and are available for examination by students.

When this is completed, the entire bird collection, numbering nearly 800,000 specimens, will be in good order, and with the aid of a new catalogue, which has been prepared and marked so as to show the exact position of each species, it will be possible to find any specimen required without loss of time.

Society for the Promotion of Nature Reserves.—It will interest Members of the Union to hear that a new Society has recently been formed to encourage the preservation of wild and primitive tracts of the British Islands in their present condition as a refuge for our indigenous fauna and flora.

Although elsewhere—in the United States, in New Zealand, and in various parts of Africa—much has been done by the State, in the United Kingdom it has been left to private enterprise and private munificence to establish and finance such refuges and nature-reserves as we at present possess. Something has been attempted, it is true, to check the wanton destruction of animal life by various Acts of Parliament, and we possess in "The National Trust for Places of Historic Interest or Natural Beauty" (25 Victoria Street, Westminster) a body who have already done much in this direction, although their main efforts have been directed to preserve ancient buildings and areas which are more interesting for their scenery. But they have recently secured to the public a tract of land on the coast of Norfolk, known as Blakeney Point, comprising 1000 acres, the resort and resting-place of large numbers of our migrants, and also a portion of Wicken Fen in Cambridgeshire, one of the few regions of undrained fen-land left in England.

The new Society, which will co-operate with the National Trust, and which is to be called the "Society for the Promotion of Nature Reserves," has been founded with the following objects:—

1. To collect and collate information as to areas of land in the United Kingdom which retain their primitive conditions and contain rare and local species liable to extinction owing to building, drainage, and disafforestation, or in consequence of the cupidity of collectors. All such information to be treated as strictly confidential.
2. To prepare a scheme showing which areas should be secured.
3. To obtain these areas and hand them over to the National Trust under such conditions as may be necessary.
4. To preserve for posterity as a national possession some part at least of our native land, its fauna, flora, and geological features.
5. To encourage the love of Nature, and to educate public opinion to a better knowledge of the value of Nature study.

The Society exacts no subscription: members are formally elected by invitation of the Executive Committee (marked with * below), and all interested are invited to communicate with the Secretaries. The control of the Society's affairs is in the hands of a representative council consisting at present of the following:—

President, the Right Hon. J. W. Lowther, M.P., Dr. I. Bayley Balfour, F.R.S., Sir E. H. Busk, Francis Darwin, F.R.S., Dr. F. D. Drewitt, *G. Claridge Druce, Professor J. Bretland Farmer, F.R.S., E. Fletcher F.R.S., the Right Hon. Sir Edward Grey, Bt., K.G., M.P., the Right Hon. L. V. Harcourt, M.P., *Sir Robert Hunter, K.C.B., Lord Lucas, *E. G. B. Meade-Waldo, *the Hon. E. S. Montagu, M.P., the Earl of Plymouth, C.B., Professor E. B. Poulton, F.R.S., Sir David Prain, F.R.S., *the Hon. N. C. Rothschild, *W. H. St. Quintin, Dr. R. F. Scharff, W. M. Webb. *Ex-officio*: Hon. Treasurer, *C. E. Fagan, I.S.O.; Hon. Secretaries, *W. R. Ogilvie-Grant and the Hon. F. R. Henley.

The Trustees of the British Museum have kindly given permission to the Committee to use the Natural History Museum, Cromwell Road, London, S.W., as the temporary address of the Society.

The B.O.U. New Guinea Expedition.—Members will be glad to hear that Mr. Wollaston and his party reached the coast of Dutch New Guinea about September 18th last, and had formed a base-camp on the Oetakwa River as far up as the water was navigable for the launch. Mr. Kloss, of the Perak Museum, who had joined him with a large party of Dyaks, reported that after one week of strenuous work almost the whole of the stores had been transported from the river to the base-camp, and that he hoped very shortly to start collecting at 3000 feet. (See 'Ibis,' 1912, p. 555.)

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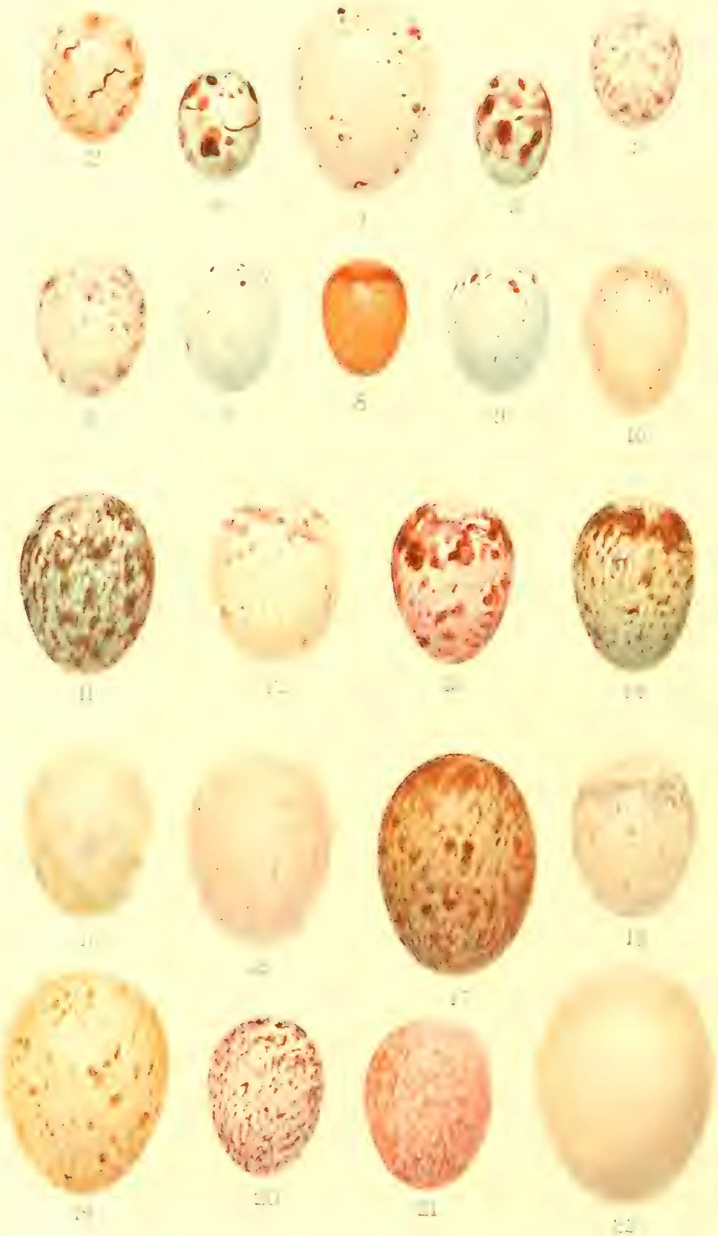
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[Continued from p. 76.]

(Plate V.*)

Motacilla ocularis.

The Streak-eyed Wagtail is an exceedingly common bird of passage at Hong Kong, Macao, and on the Kwang Tung coast generally. Although appearing as early as August 9 on migration, the latter part of September or early October is the more usual time for their advent, when immense numbers may be seen on the cricket-ground and in the Naval dockyard and elsewhere on the island of Hong Kong. The birds on their passage usually roost in the trees, and as many as fifty were observed to crowd themselves, with much bickering, into a small tree in the Naval dockyard. They leave again on the spring migration in April, and probably only breed in the far north of Asia; they do not occur inland, so that their migration is along the coast-line.

At Hong Kong this species is very much more numerous than *Motacilla leucopsis*.

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* For explanation of the Plate, see p. 200.

MOTACILLA LEUCOPSIS.

The White-faced Wagtail is mainly a winter visitor, but a very few pairs remain, both on the coast and inland, to rear their young.

This bird is one of the earliest to arrive from the northern breeding-grounds, and as early as the end of August or the first week in September numbers are pouring south, especially in the western parts of Kwang Tung and in Kwang Si. The migratory rushes take place well on into October, and hundreds of the Wagtails may be seen at evening time on the Hong Kong cricket-ground, the majority of which are immature. As with its near allies, the young, after being hatched, move about with their parents, and family-parties appear on migration.

As early as March 18 a pair was found to be building a nest in a hayrick; and on April 15, at Samshui, a nest containing five young birds was noticed in the thatch of some brickworks near that place. In June, birds, evidently breeding, were seen in Hong Kong. At Tam Chau and Kwei Hsien, in Kwang Si, young birds were seen in July and August.

On the upper reaches of the West River, where there still exist virgin forests, huge rafts of logs are made in the winter months, and these, covered with turf, bamboo-twigs and vegetable rubbish, are floated down the river when the summer floods permit. On each of these rafts there is invariably either one or a pair of these birds, and they live entirely on this floating home and journey with it for many hundreds of miles from west to east, indeed until the raft is broken up at Canton. The birds while on the rafts catch innumerable flies.

This species has evidently a wide breeding-range, as it is known to nest in Shantung, Fokien, Kwang Si, and Kwang Tung.

About the third week in April most birds proceeding north leave Hong Kong, but some migrants linger until the second week in May.

MOTACILLA MELANOPE.

The Grey Wagtail is a common winter visitor to the Kwang Tung coast, and some individuals arrive from the north as early as September 6, but the greater number appear about the first half of October.

During this autumn migration these birds at times absolutely swarm in the paddy-fields, where they descend to feed. The Chinese sometimes catch them after dark at this time by taking a net and drawing it over a small paddy-field. When the feeding birds hear this they spring up and catch their necks in the meshes. At the end of the draw the two Chinamen drop the net and walk along it extracting the birds, which are then sold as "Rice-birds."

Many of these Wagtails appear to have the breast of a deeper yellow and perhaps a shorter tail than is usually seen in western specimens.

MOTACILLA TAIVANA.

The Eastern Yellow Wagtail is a very local winter visitor, but is abundant in the marshes at Shiapo and Samchau near Samshui, the only two places where it is found.

Unlike most Wagtails, these birds are exceedingly shy and retiring, confining themselves to the wettest portions of the marshes; they hide in rank decaying vegetation or skulk in the long grass. This species has been observed as early as August 31.

MOTACILLA FLAVA.

This Wagtail was only seen during the spring migration in the months of March, April, and May. It was observed at Samshui and near Tolo Harbour, Kowloon Peninsula. It is a rather unusual spring bird of passage.

LIMONIDROMUS INDICUS.

This species was noticed both in Kwang Si and Kwang Tung, on the coast as well as inland, but always singly. Individuals were seen in May, August, November, and December.

ANTHUS CERVINUS.

One skin of this Pipit was found among those of *Anthus maculatus*.

ANTHUS MACULATUS.

The Eastern Tree-Pipit is a very common winter visitor to Hong Kong, Macao, and the West River. The birds arrive in October and usually leave in April, but have been seen as late as the middle of May.

Although this Pipit feeds in the marshes in mulberry-canes and long grass, it is commonly enough observed getting its living by the side of frequented roads and in gardens at Hong Kong, but the most curious thing about it is its marked habit of feeding in trees. It flies up into a tree, usually afir-tree, runs along one bough, hops on to the next, and runs along that, hunting busily for insects all the time.

Swinhoe noticed that when disturbed these birds always fly into a tree, but he did not apparently observe this arboreal mode of picking up a living.

ANTHUS RICHARDI.

Richard's Pipit is an exceedingly common winter visitor to Kwang Tung, the first arrivals appearing early in October or at the end of September, and the later departures taking place towards the end of May.

There is with this species, as with many others, a good deal of local movement in the winter months, in addition to the actual great migratory rushes. On January 4 numbers were seen where the previous day there had been none, and these were not at all likely to have come from far north at that time of year.

In southern China this species is very tame and allows one to come within a few yards of it. It has been seen to fly up into a tree when disturbed, but this is unusual.

It is possible that some of these birds may breed in Kwang Si, for one was observed at Tam Chau on July 12.

CHLORIS SINICA.

The Chinese Greenfinch is a resident species on the West River, but in Hong Kong and Kowloon it was only observed as a winter visitor, and an irregular one at that.

Up the West River these birds go about in small parties during the summer, but in the autumn and winter they form themselves into considerable flocks, and these are augmented by very large numbers of birds which come down from the north on migration. In Feb. 1902, in very cold weather, large flocks appeared at Kowloon, whence they departed as it grew warmer.

Their cry is a cheerful twitter with some resemblance to that of the English Greenfinch, but lacking the mournful long-drawn note of the latter.

This Greenfinch is partly insectivorous and partly frugivorous, and is especially fond of the seeds of fir-cones. Nesting sometimes commences very early, for a well-fledged young bird was seen in a cage on April 6. Nests have been taken from March 29 until June 17 in bamboos, evergreens, and various fruit-trees; they are slight structures, but well built, and small for the size of the bird. At the nest the birds are very bold. The usual clutch is four, but five eggs have been observed.

Eggs vary in length from ·79 to ·64 and in breadth from ·55 to ·49; they average ·72 × ·52 (see Plate V. fig. 7).

EOPHONA MELANURA.

The Chinese Grosbeak occurs regularly but never abundantly at Hong Kong in the months of January, February, and March. On the North River a considerable party was seen on April 24, and small flocks were noticed also on the West River in that month on passage northwards.

Swinhoe noticed this species in plenty at Canton in early spring, and surmised that it bred there, but in this there can be little doubt he was mistaken.

PASSER MONTANUS.

As is very well known, Tree-Sparrows in China take the place of *Passer domesticus* in western Europe, and have become noisy, bold, and eminently parasitic on man, in precisely the same way as the latter.

The Tree-Sparrow is, if anything, rather bolder and more impudent than the European House-Sparrow, for not only is it exceedingly fond of the outsides of houses at Hong Kong but frequently comes inside as well, through the wide open windows.

In the early autumn great flocks of these birds, in company with a few Russet Sparrows and Buntings, are seen in the paddy-fields, where they proceed to gorge themselves with ripe grain. In the middle of March they repair to their nesting-sites, which are nearly always about houses, under the eaves of temples, or in the mud walls of the cottages, in which last situation they peck out a hole for themselves in the friable material.

Kwei Hsien in Kwang Si is the only place where these birds were seen to be nesting in trees, and there they did not nest in holes in the trees, as is usual in the west, but built, as do the House-Sparrows under similar circumstances in Europe, a large untidy nest of straw and grass. Eggs may be found at the end of March, and five is the usual number in a first clutch, but as many as seven were noticed.

At least three broods are got off in the summer, and fresh eggs have been taken up to August 1st. These later clutches do not contain more than three eggs.

PASSER RUTILANS.

The Russet Sparrow is a fairly common bird of passage in the month of April, when considerable flocks pass through on their way to the north.

The flocks do not, as a rule, mix with those of *Passer montanus*, but keep strictly to themselves, neither do they settle on houses and seek human neighbourhood, but rest on trees in the fields and open country. The note of this bird is not so loud and a good deal sweeter than that of the Tree-Sparrow. The crops examined were full of rice-grains.

In January a large flock was noticed, so that apparently the bird at times spends the winter on the West River.

Both the Russet and Tree-Sparrow are sometimes seen crowded together in the bamboo-cages of the Hong Kong bird-shops.

EMBERIZA PUSILLA.

The Little Bunting occurs during the winter, and on New Year's Day, 1906, large numbers of these birds accompanied by *Otocompsa emeria* in big flocks were found in the mulberry-canes near Samshui. It was blowing from the northward and very cold at the time.

This species shews a far greater inclination for perching on trees than most of the genus.

EMBERIZA FUCATA.

Painted Buntings are common winter visitors, and put in an appearance as early as the first week in September, when they betake themselves to the paddy-fields and live luxuriously on rice. About the third week in April and on until the end of the first week in May they begin to move off to the north, by which time they are in good feather and much brighter in plumage than in the winter.

EMBERIZA AUREOLA.

The Rice-bird is an extremely abundant species on the spring and autumn migration; it passes through all the part of China under consideration, but does not stay for the winter. It arrives about October 12 and remains until the end of the month, and on the return journey it comes about April 19 or 20.

These little birds are much prized as dainties, and are caught in vast numbers by professional bird-catchers, who use precisely the same sort of clap-nets and call-birds as their confrères in England. Immense numbers are caught and crammed into bamboo-cages, and at the end of the day they are taken to the river and drowned.

Rice-birds are prized by Europeans and Chinese alike, and not only do the rich natives at Canton consume large quantities, but many are tinned and exported to Singapore and to America for the benefit of Celestial exiles.

As a matter of fact, any small yellowish bird is sold as a Rice-bird by the Chinese, and one itinerant merchant in Macao was seen with two hundred *Motacilla melanope* to dispose of for culinary purposes.

EMBERIZA RUTILA.

The Chestnut Bunting is an irregular winter visitor, but one was obtained at Shia Po on January 6, creeping in long grass.

On April 19 large numbers of these birds were found in the mulberry-canes of the Delta, and remained plentiful until the end of the month. Such an incursion was quite unusual however, and due perhaps to the floods which occurred about that time. In the autumn of 1907 these birds did not migrate south *viâ* the river.

EMBERIZA SPODOCEPHALA.

The Black-faced Bunting is a common winter visitor, arriving about October 19, and leaving again in the latter part of April and early in May. It frequents paddy-fields in the autumn and mulberry-canes in the spring, in company with *Emberiza fucata*.

MELOPHUS MELANICTERUS.

This handsome Bunting is resident at Kowloon and on the coast of Kwang Tung generally, and in the winter is gregarious and goes about in considerable flocks. At the end of March and until the end of April these are in process of breaking up and mating is taking place.

The bird builds its nest either on the ground or in a cleft in a rock, and eggs may be found in April, May, and June. The nests are very difficult to find, and the birds require a lot of watching before their secret is revealed. Whilst the hen is sitting the cock sits up in true Bunting fashion on a boulder or on a telegraph-post, and sings his Bunting-like song continuously and most monotonously.

Eggs vary in length from ·86 to ·76 and in breadth from ·68 to ·61, and average ·80 × ·76.

ARTAMUS FUSCUS.

This species was found only at Kwei Hsien, in Kwang Si, and as observations were made in August no eggs were obtained. When hawking for their prey they look very like Swallows; they are very tame, and have two cries—a pleasant twitter and a harsh shriek. At sunset family-parties may be seen sitting on a bare bough, the young ones being fed by their parents.

The nest is a very slight affair of small rootlets lined with finer material, and is placed, like that of so many other species in this country, at the extremity of a slender bough and at a considerable height from the ground.

SPODIOPSAR SERICEUS.

This Starling is a winter visitor, and was first seen on November 3 and last seen on March 3. It always occurs in flocks, which consort at times with Mynahs and roost with the huge mobs of the latter in the bamboos fringing the reed-beds at Moto Mun and elsewhere; they were observed to fly from the coast, where they spent the day, to rest at night in clumps of these trees.

STURNIA SINENSIS.

This handsome little Starling is a common summer visitor to both Kwangs, but is more abundant on the coast than inland. It is also observed occasionally in the winter months at Mirs Bay and Kowloon. The birds arrive on the coast about the end of March or very early in April, and perhaps a day or two later at Samshui; they come already mated and commence nesting-operations without delay.

A pair of these birds was observed attempting to excavate a hole in a bombax-tree, but, as a rule, they nest in crevices of buildings, especially in old and ruinous pagodas, and often in company with *Passer montanus, Acridotheres cristatellus*, and sometimes with *Cypselus subfurcatus.*

In Hong Kong these Starlings seek out their nesting-sites of the previous year and repair their old nests, littering and fouling the ground beneath to an astonishing extent. They frequently nest in large communities. They occasionally feed upon the ground, but, as a rule, perch on the slimmest twigs and branches of various trees, where they pick insects and larvæ from the leaves.

The birds which breed at Hong Kong all leave by about the middle of September, but they have been noticed at Macao a little later in the month.

The first eggs are laid at the beginning of May and the majority by the middle of the month; four or five form the usual clutch. This species is not double-brooded, and the young remain with their parents all through the summer.

Eggs vary in length from 1·08 to ·95 and in breadth from ·75 to ·69, and average 1·01 × ·74.

Sturnia sturnina.

On October 11, 1904, near Samshui, a flock of these birds passed overhead whilst one of the writers was shooting pigeons. He browned them and obtained several specimens; all of these, except one, were lost when H.M.S. 'Robin' was afterwards wrecked.

This is the only occasion on which this species was met with.

Graculipica nigricollis.

The Chinese Grackle is one of the commonest birds met with in both provinces, but is rather more abundant up the river than on the sea-coast, and less plentiful to the west of Wuchau than to the east of that place.

The loud and cheerful piping cry of this bird is one of the most familiar, as well as one of the most pleasant sounds of the southern Chinese countryside, and is to be heard continually after the moult is over in November, until the succeeding autumn. At times these birds have been seen following the plough as Rooks are wont to do, and it seems probable that they live entirely on grubs and insects.

In the summer months, after the young are hatched, Grackles go about in family-parties, but in October and November, when their numbers are largely augmented by others from further north, they form themselves into large flocks, and these join company with those of Starlings and Mynahs, the whole concourse roosting in favoured reed-beds or bamboo-clumps, and performing graceful aerial evolutions at sunset before retiring to rest, with much clamour and squabbling.

This bird, in south-eastern China, places its large, untidy, globular nest usually in a bombax-tree, but not infrequently also in a banyan or a bamboo, and it shews a decided preference for the proximity of the abode of a Magpie. The first nest is usually completed about the middle of April, and the young are hatched after about sixteen days incubation. They usually rear three broods, and for each laying they build a new nest, the first of which occupies them ten or fourteen days in construction, whilst later ones can be finished in a day if necessary. The three nests are often placed in the same tree, and after the first clutch of eggs has been hatched the empty nest is usually commandeered, without delay, by a pair of Mynahs, *Acridotheres cristatellus*, who, having added a few feathers and the indispensable piece of snake slough, proceed to lay in it.

On one occasion the three nests were found in one tree, the latest being in possession of the Grackles, the earliest in that of a pair of Mynahs, whilst the second contained a nest of the Magpie-Robin with a clutch of three eggs.

The full clutch for the first laying is four or five eggs, much more often the former ; for the second, three or four, usually three, and for the last, two or three, more frequently two.

The eggs of this species are usually blue and unspotted, but on various occasions pure white eggs were found, and on others the eggs were observed to be spotted with minute markings of brownish purple. These spotted eggs are never met with until late in the season. On one occasion a Grackle's nest containing a white egg was found inside a Magpie's great domed structure, and on another, two white eggs were found in a nest with one of the Koël. When four eggs of the Koël are found in a Grackle's nest those of the rightful owner are invariably disposed of, though how the usurper distinguishes its own productions in the dark interior of the covered nest it is difficult to say.

The Grackle attacks the Koël just as the Crow does in India, but never so desperately, and the young Koël or Koëls grow up very comfortably with the young of their foster-parents, who feed them side by side. Although usually placed in a tall tree, a nest was found, in course of construction, only four feet from the ground.

Eggs have been taken from April 20 until August 9, and they vary in surface from smooth and glossy to decidedly granular.

A large number of eggs average 1·28 × ·91, and vary in length from 1·40 to 1·18 and in breadth from ·96 to ·86.

Acridotheres cristatellus.

The Chinese Mynah is one of the commonest resident birds in Kwang Tung and Kwang Si.

In the winter months these birds are gregarious, and large flocks are not infrequently seen at Moto, where they roost at night in the reeds. Their clamour, Starling-fashion, is deafening before they go to roost, and, also Starling-wise, they indulge in aerial evolutions before retiring. The formation of flocks has been noticed as early as July 23, but more usually takes place in October.

The Mynah breeds plentifully at Hong Kong and elsewhere on the Kwang Tung coast, where, as a rule, some hole in a building, the top of a waste-water pipe, or still more frequently the deserted hole of one of the Kingfishers, is made use of. In the latter, a sort of step is always scratched at the lower portion of the orifice, which is also considerably enlarged.

Up the West River and inland the favourite site is an old

Magpie's nest, though ruinous old pagodas and holes in trees are also made use of, and the deserted nest of *Graculipica nigricollis* is sometimes resorted to. In suitable situations breeding-colonies are often found.

The nest itself is an untidy affair of straw, dry grass, pine-needles, feathers, wool, paper and other rubbish, and invariably, as pointed out by Rickett and La Touche in their 'Birds of Fokien,' contains pieces of snake's slough.

The eggs are blue, and much resemble those of the Starlings, and like so many blue eggs they vary much in colour-intensity. Eggs pure white in colour have been taken, and eggs with a few spots have occurred later on in the season. The most usual number of eggs in a clutch is four, but five, six, and seven are found, the latter rarely.

The earliest date for fresh eggs is April 15 and the latest July 4, but the majority of these birds breed in May and are double-brooded.

The Mynah is a great mimic and has been heard in a wild state imitating the Chinese Francolin and other species. As an excellent talker, it is in great requisition among the Chinese for a cage-bird.

Eggs vary in length from 1·26 to 1·07 and in breadth from ·90 to ·79, whilst they average 1·16 × ·85.

MUNIA ORYZIVORA.

Java Sparrows are not very common at Hong Kong, and have usually been noticed in the spring and early autumn.

On several occasions in late September and early October small flocks have been seen in the trees at the Hong Kong Naval Hospital and at Happy Valley, and in February a solitary bird was noticed at Stonecutter's Island.

In June 1905, the Punjabi police sergeant at the R.N. Hospital captured a bird of the year, not very well able to fly, in a butterfly-net, so that the species must breed somewhere in south-eastern China, and seeing how extraordinarily local many species are it might easily be overlooked.

MUNIA TOPELA.

These small Weavers are common everywhere in both Provinces, both on the river and on the coast. In the winter they congregate in considerable flocks in some parts, but never in Hong Kong.

At Macao in the Governor's summer garden there are two Monkey Puzzler trees, in which large numbers of these birds breed, and where their domestic arrangements are easily watched. The nests are huge for the size of the builders, untidy, oval masses of grass and weeds, having the long axis horizontal, but lined within very carefully with fine grasses and possessing a well-made rounded entrance-hole at one end. On one occasion two nests were found, built one on the top of the other, but quite separately, so as to form a sort of two-storied structure.

It is amusing to see this little bird struggling to windward with a huge piece of grass in its tiny bill, which it drops and picks up twice on its way; finally it tucks it into the thatch of its house and without delay darts away again in quest of more building-material.

The usual clutch at Macao is six or seven, and though eight, eleven, and twelve eggs have been found, these are probably the product of two hen-birds. They begin to build late in March, and eggs may be found in April, May, and June. In November large numbers were noticed passing south on migration.

Eggs vary in length from ·70 to ·58 and in breadth from ·46 to ·40, and average ·62 × ·44.

UROLONCHA SQUAMICOLLIS.

This little Weaver is widely distributed on the West River and on some parts of the Kwang Tung coast, but at Hong Kong and in most parts of the Kowloon Peninsula it is a winter visitor or a spring migrant, and was not known to breed.

At Canton, Macao, and on the West River however, it is a common breeding-species, and builds its nest in a variety of situations: often in a fir-tree, sometimes quite low down, or in a bamboo, or, again, high up in a banyan or bombax tree at an elevation perhaps of forty to sixty feet. In a large tree the nest is frequently placed at the extremity of a small bough, and in such a situation is very difficult of access. Empty nests are used for sleeping in in the cold weather, and the birds were seen building a nest in January, which was used as a sleeping-place.

In the winter time these birds go about in flocks, feeding on the paddy-fields with the Sparrows, Doves, and Buntings.

Five or six white eggs are laid, from early in April until September, and sometimes even later. Seven is not very infrequently the clutch early in the season.

Eggs vary in length from ·69 to ·58 and in breadth from ·46 to ·40, and average ·63 × ·43.

ALAUDA ARVENSIS.

The Skylark is met with occasionally in the winter months, and it has occurred at Samshui, at Macao, and in the Kowloon Peninsula.

ALAUDA CŒLIVOX.

This little Lark is fairly common in Kwang Tung and Kwang Si, more so up the river than on the coast, and it is a very popular song-bird with the Chinese. It has been observed to sing very finely, sometimes on the ground or upon the slight elevation provided by a Chinese grave, and also on the wing, when having ended its song it will drop twenty feet, hover a moment, and then drop again straight to the ground.

The nest is much like a Skylark's, but perhaps a trifle more flimsy, and the eggs are laid, as a rule, in April; while, as the bird is double-brooded, a second clutch is deposited in June or July. Fully fledged young have been seen as early as May 16. The usual clutch is four, but five eggs were once obtained.

At Kwei Hsien, in Kwang Si, these birds were very numerous, and as the market price for a young bird is sixpence, all the small boys who tend water-buffaloes are on the look-out for the nests.

The Chinese take these Larks out into the country and placing the cages on the ground, or on a small mound, one bird will begin to sing, when another Lark will at once commence in rivalry, and so great singing matches are brought about.

Eggs vary in length from ·85 to ·76 and in breadth from ·67 to ·57, and average ·78 × ·62.

MIRAFRA CANTILLANS.

The Singing Bush-Lark, which does not appear to have been previously met with in China, was only noticed at Kwei Hsien in Kwang Si, where it abounds in the large grass-plain which is peculiar to that place, and is very different from the surrounding hilly country.

This bird loves to sit on the top of a boulder, whence it utters its feeble song of a few disconnected notes, and such boulders, by August, grow quite white from the accumulation of droppings upon them. At times, however, it sings in the air, but only at a height of from twenty to thirty feet, when, closing its wings, it drops to earth. It is a great skulker in grass and other vegetation.

The nest is built in a small hollow scratched in the ground, and is externally composed of small broken pieces of dry grass and internally of fine rootlets, and is so frail that it is very difficult, or impossible, to remove it complete. On July 22 nests were found containing eggs in all stages of incubation and young birds. This species is double-brooded, and the second clutches are very late, because in June the Chinese cut the grass on Kwei Hsien plain.

Eggs average ·78 × ·58, and vary in length from ·89 to ·75 and in width from ·67 to ·56.

UPUPA EPOPS.

A Hoopoe, which flew on board a small river-steamer near the island of Lintin, between Macao and Hong Kong, was taken to Mr. J. C. Kershaw, who gave it to the writers.

Mr. J. C. Kershaw has occasionally seen it whilst passing along the coast on migration at, or near, Macao.

CYPSELUS PACIFICUS.

Except on a mountain-top at Howlik, these Swifts have not been observed away from the coast.

The birds are summer visitors, and the earliest date on which they were noticed at Hong Kong was March 26, but most arrive in April, and leave again for the south early in September. The greater number of the birds, however, pass on to regions further north.

This species shews a strong partiality for rocky precipitous islands and for barren mountain-tops, where it flies round and round in the same manner as the European Swift, and, like it, is only to be seen on certain days and chiefly in the morning and evening.

Whether these birds ever breed in the neighbourhood of Hong Kong was not ascertained.

CYPSELUS SUBFURCATUS.

This is a fairly common summer visitor to the West River, but it does not occur on the coast. The first arrival came in on April 3, but the bulk of the birds did not appear until some weeks later. They leave for the south again during the third week of October.

At Kwei Hsien, in Kwang Si, numbers were found breeding in limestone-caves, and as some nests contained incomplete clutches of fresh eggs and others fully fledged young on July 20, two broods are evidently reared. The full clutch is four. At Samshui about twenty-five pairs breed on the beams inside the roof of a small temple. On October 22 the birds were still sleeping in the nests used during the past summer.

When the nest is made in a cave it is placed in a crevice or under the roof, and is difficult of access. In a temple it is usually fixed on a beam under the roof.

The nests are made of dry grass, fern, and leaves, with a few flowering grass-heads and a feather or two, all cemented together by a mucilaginous secretion from the birds' salivary glands. They usually have two entrances, but when under the roof of a cave one side hangs down so as to form a single entrance.

The eggs are white, and three average ·86 × ·59.

CHÆTURA CAUDACUTA.

During the third week of April, 1907, several pairs were noticed by Mr. J. C. Kershaw hawking for flies in the forest at Howlik.

CAPRIMULGUS MONTICOLA.

This Nightjar occurs as a winter visitor on the lower parts of the West River, but is rare on the coast.

At Kwei Hsien, in Kwang Si, birds both mature and immature were plentiful on the plain, and there can be little doubt that they breed there.

CAPRIMULGUS JOTAKA.

The Indian Nightjar is a winter visitor which only occurs between the months of October and April, while a good many pass through on migration.

As a rule, it appears on its way south from October 12 to 26, and on its return journey leaves about April 21 or a little earlier. It is to be seen up the West River as well as on the coast, and it has been noted on the small islands between Hong Kong and Macao.

EURYSTOMUS CALONYX.

The Broad-billed Roller passes through on the spring and autumn passages in small numbers, and has been observed in April and May on the former, and in September on the latter. A few pairs were seen at Howlik on May 10, but, as a rule, these birds, like so many others, keep to the coast. Its undulating flight is very curious, and is not unlike that of the Green Woodpecker.

CERYLE VARIA.

This Kingfisher is confined to fresh water, or at any rate to such parts as are only slightly brackish, as where a considerable freshwater stream debouches into the sea.

It is a resident, and it makes its nesting-hole almost always in the main banks of the river, but has been known to bore into a sandy cliff on the sea-shore or into a bank of disintegrated granite on a hill-side. The nesting-hole is usually from three to five feet in length, with the usual nest-cavity at its extremity.

In time of heavy flood many Kingfishers' holes become inundated. It was found, however, that when a hole had been laid open the old birds were able to transport their young to another, probably in their beaks.

After the first egg is laid, one bird always remains in the nesting-hole to guard it against rats, but incubation is not commenced until the full clutch is laid. The male sleeps in a separate hole.

Fresh eggs have been found as early as Feb. 16, and as late as May 12, but the usual time for laying is from early March to the middle of April. This species is single-brooded, and a full clutch of eggs is four or five.

Eggs vary in length from 1·27 to 1·03 and in breadth from ·99 to ·93, and average 1·19 × 96.

CERYLE LUGUBRIS.

This large Kingfisher is rather sparingly distributed in suitable localities in Kwang Tung and Kwang Si. It was noticed at several places on the West River, including Howlik and Tam Chau, above Wuchau.

In the New Territory it was seen several times, and on one occasion, as it flew from one side to another of a small rocky inlet, near Tolo Harbour, it seemed as if it might sometimes fish in the sea, though usually it is confined to fresh water. Its nest and eggs were not obtained.

Its cry is a metallic twitter, and not loud for the size of the bird.

ALCEDO BENGALENSIS.

Alcedo ispida Linn.; Sharpe, Cat. B. M. xvii. p. 141.

This little Kingfisher, so like the common European species, except in size, is very abundant both on the sea-coast and inland on various waterways and rocky streams.

The bird is quite as much at home when fishing in salt water as in fresh, and it may be seen either perched on a rock or stake on the sea-shore, in the familiar expectant attitude, whence repeated darts are made at small fish. Sometimes it is observed hovering with rapidly moving wings, Kestrel-fashion, over the surface of the sea, to drop like a stone in a small cloud of spray on to its prey, from a distance of twenty feet or more.

The bird is a resident, and, though subject to some local movement, is probably not really migratory.

The nest is very frequently made in the high mud or earthen bank of a paddy-field, and may be a very considerable distance from any stream or body of water. Generally it is two or three feet above the water, and nearer the bottom than the top of the bank. The nesting-hole is not more than eighteen or twenty inches deep.

April 12 is the earliest date for eggs and the latest July 5, so that undoubtedly this species is double-brooded.

The usual clutch is six or seven, and eggs vary in length from ·83 to ·74 and in breadth from ·71 to ·64, and average ·80 × ·68.

HALCYON SMYRNENSIS.

The Smyrna Kingfisher is found commonly thoughout the whole area under consideration, and is partly resident and partly migratory. A certain number of birds are to be seen throughout the winter, but these are largely supplemented in the third week of March at Hong Kong by individuals which arrive from the south. As soon as the migrants arrive they repair to certain steep banks on the hill-sides or in water-worn nullahs eaten out of the disintegrated granite by the spring rains, and into them they drive their nesting-holes. As a rule, a fresh hole seems to be made each year, but not invariably. The birds shew the usual Kingfisher-like preference for a former nesting-site, and many holes may be seen in the same cliff or bank.

During the nesting-season these birds have a particularly cheerful laughing cry, in addition to the series of discordant shrieks, to which they give vent when disturbed or alarmed.

The nesting-hole is about eighteen inches to two feet deep, never more, with an enlarged chamber at its end, and the eggs are laid on the bare soil, with which they are invariably stained, and round them grows up an ever-increasing pile of the chitinous parts of various insects, the carapaces and other cretaceous portions of crabs, and many bones of lizards and other small reptiles ejected by the sitting bird.

During the nesting-season this species and the next have a curious habit, which almost amounts to a species of love-play. A pair will rise to such a height in the air as to be almost invisible to the naked eye, and then fly round and round in an aimless way, calling loudly their laughing nuptial cry, for as much as an hour together.

On rare occasions a single bird will fly high up in the air calling in this way, but never to such a height, nor for so long, as when both are present. At other times of the year the birds never fly at any great altitude.

This species and the next are greatly persecuted by the Chinese, who use their blue feathers for the manufacture of the well-known "Kingfisher enamel," which has been in use in China since the time of Confucius.

The eggs are laid at the end of April or early in May, the earliest and latest dates being April 29 and May 8. Unless disturbed these birds are single-brooded. Five is the usual clutch, and the eggs measure 1·23 to 1·11 in length and from 1·06 to ·99 in breadth, the average being 1·14 × 1·03.

HALCYON PILEATUS.

The Black-headed Kingfisher is confined in Kwang Tung to the sea-coast, where during the winter months it is a fairly common frequenter of various muddy creeks, on the advent of the breeding-season in April its numbers are greatly swollen by individuals arriving from the south.

A fairly complete account of the nidification of this species is given by one of the writers in 'The Ibis' for 1908 (on page 455), and little can be added to it.

Apparently the Black-headed Kingfisher does not kill reptiles, at least it has not been observed to do so, but during the nesting-season it supplements its usual crab diet by abundant insects, principally beetles.

This species ranges north to Corea and south to India and the Malayan Islands, but it is always a scarce bird; in Hong Kong, however, during the nesting-season it is rather more common than the other representative of the genus and one of the most conspicuous birds in the island. Possibly the partial protection from the Chinese feather-hunters afforded it at Hong Kong has assisted to the increase of its numbers there.

This species sits closely, and the female is very frequently captured in the nesting-hole.

The eggs vary in length from 1·23 to 1·11, and in breadth from 1·09 to 1·01, whilst a large number of eggs average 1·18 × 1·04.

DENDROCOPUS CABANISI.

This Woodpecker is sparingly distributed, especially near the coast, wherever there is a sufficiency of dead timber of a suitable size. Its call is a burr and a rattle, like that of the European Great Spotted Woodpecker.

On February 25 a pair was heard tapping near Wang Mun, and on June 5 near Samshui a pair finished excavating a hole in a fir-tree which had been used before, as it contained about a dozen holes altogether. However, the tree was blown down and so no eggs were obtained, although some fragments of white egg-shell shewed that the birds had probably bred there.

IYNX TORQUILLA.

Wrynecks occur in small numbers during the winter months, and some are observed also on the autumn and spring migrations in the months of November and April.

They have been observed to hunt on the ground for ants, and if disturbed to run for a tree and walk up the opposite side of it to the observer. They do not give vent to their characteristic and unpleasing call in the winter months.

MEGALÆMA VIRENS.

The Great Chinese Barbet occurs only in the sacred forest at Howlik, that sanctuary of so many species of birds, and there it is both resident and common. It spends most of its time at the top of some tall tree, and when it takes to flight has the appearance of falling from, rather than of springing from, its perch in the manner of other species. The flight is slow and undulating, and accompanied by a loud rustling sound, which is audible at a considerable distance.

These birds are very noisy, and especially so in the spring and summer, when their loud and mournful cry may be constantly heard, in addition to which they also have a harsh screech.

Their food consists of various fruits and berries, which they vigorously tear from the pedicles with their strong beaks, and it is when so engaged that it is easy to shoot a specimen, for it is on other occasions difficult to see, so protective is its colouring. On no occasion was the Barbet ever seen on the ground.

About the middle of April these birds are paired and commence to excavate their nesting-holes, which is done by either sex alternately. When excavating, the bird clings to the trunk of the tree in a vertical position, using the tail as a fulcrum and making a savage stab at the semi-decayed wood ; it wrenches out a piece and lets it fall, and when this has been repeated about some twenty times the worker takes a rest and is relieved by its mate. It is only on these occasions that the bird takes up this Woodpecker-like attitude, at all other times it perches on a branch in the usual Passerine fashion.

The nesting-hole is excavated in a leisurely fashion, since one commenced on April 14 was still unfinished on the 24th, but then this species, like many others, often begins a nesting-site only to leave it incomplete. No eggs were obtained, but three young birds were found on May 23 by Mr. J. C. Kershaw.

The nesting-hole is always in the main stem of the tree and usually high up, and the eggs are laid on the rotten wood and wood-chips at the bottom of the hole. Probably the first half of May is the best time to find fresh eggs.

COCCYSTES COROMANDUS.

This handsome Cuckoo was only seen twice; once in April, and once in June, at Samshui, so that it may be considered an unusual summer migrant; doubtless it travels by some other route to the north.

HIEROCOCCYX SPARVERIOIDES.

The Hawk Cuckoo is a rare and probably accidental visitor. It was obtained once—on October 21 in the Delta, and was seen on September 8 but not obtained.

CUCULUS MICROPTERUS.

The Indian Cuckoo is a common summer visitor at Macao and to certain parts of the West River, but some also pass through to districts further north. It usually arrives during the first week in May and leaves at the end of September, or early in October. A young bird was, however, seen at Howlik on May 6, and another, a mature individual, at Wuchau, as late in the year as November 6.

On the Chinese mainland, a few miles from Macao, there is a small wood of large timber, in which some half a dozen pairs of Black Drongos (*Buchanga atra*) yearly take up their summer residence for breeding purposes. In this wood a nest of the Drongo was found, partially built at the end of a horizontal bough of a fir-tree, some forty-five feet from the ground, on May 11. It was not possible to visit the nest again until May 26, when it was found to contain two eggs of the Drongo, somewhat incubated, and a fresh egg of this Cuckoo.

The Drongos continually assailed the Cuckoos, dashing at them, both from before and behind and from either side;

the latter appeared, however, to view these assaults with perfect equanimity. From the fact that fragments of the eggs of this Cuckoo were often picked up under the trees in this wood, it seems probable that the Drongo may turn the eggs of *Cuculus micropterus* out of its nest on occasion, for such shells are those of fresh eggs.

Mr. J. C. Kershaw shot a female of this species, from the oviduct of which he took an egg, that was about to be laid. It is whitish in ground-colour, spotted and clouded about the larger end with rusty red, and about the same size as that of *Cuculus canorus* (see Plate V. fig. 1).

Staff-Surgeon J. P. H. Greenhalgh, R.N., noticed that the young of this species ejects the young of the foster parents in the same fashion as does that of the European Cuckoo.

CUCULUS CANORUS.

Cuckoos of this species are only obtained on the spring and autumn migrations, when they are seen singly and are never heard to give their characteristic call.

Some of these birds are seen at Hong Kong and Samshui as late as the first week in May.

CUCULUS SATURATUS.

Cuculus intermedius Vahl; Shelley, Cat. B. M. xix. p. 252.

The Himalayan Cuckoo is considerably rarer than the other two allied species, but has been seen and shot in October and in April, on its spring and autumn migrations.

CACOMANTIS MERULINUS.

This Cuckoo is a common summer visitor, its abundance being doubtless relative to that of the Tailor-bird, on which it is parasitic. Occasionally it arrives as early as at the beginning of March, but the majority of these birds appear from the last week of that month until about the middle of April.

From its peculiarly penetrating and mournful cry, it is well known to the Europeans of south-eastern China, who call this species the Rain-bird, because it is supposed to be most noisy before a spell of wet weather. The fact that it puts in an appearance, and is breeding and calling during the wettest time of the year, has in all probability given rise to its name.

A series of low, penetrating whistling sounds in a falling cadence, terminated by several rising notes, constitutes the song of the male. The female calls the male to her by a harsh dissyllabic cry, which is quite characteristic. The male repeats his monotonous call all day and nearly all night, the effect being most maddening; the female was only observed to give her special note during daylight hours. After the female has called up the male by her peculiar cry, pairing has been observed to take place in the topmost branches of a high tree.

This species arrives ready mated, and breeding commences at once; a pair of Cuckoos takes up a special district and is parasitic on the Tailor-birds (*Sutoria sutoria*) within it, and other pairs do not intrude on territory that does not belong to them.

From the position of the nests of the Tailor-birds, and the difficulty there is in getting even two fingers into them, whilst *in situ* there is little doubt that the Cuckoo lays its eggs on the ground, and afterwards places them in the nest of the foster parents.

Except in point of size, the eggs of the parasite bear a strong resemblance to those of the host; they are of a greenish-blue ground-colour and are easily divisible into two well-marked types: in one there are faint rusty, reddish-coloured markings, of indefinite outline, on a greenish-blue ground, and in the other the markings are like dried blood on a much darker ground and with more of blue in it.

It is curious that precisely the same varieties are met with among the greenish eggs of *Sutoria*, and it is also true that *Cacomantis* often lays an egg of one type in a nest of *Sutoria* containing those of the other. *Cacomantis* also places its eggs in the nests of *Sutoria* which contain eggs having a white ground-colour, so that apparently neither *Sutoria* nor *Cacomantis* are capable of discrimination in the matter.

There are reasons for being fairly sure that a female *Cacomantis* always lays an egg of the same type.

At the end of the summer there is an alteration in the song of the male, and some of his notes are dropped, especially those which terminate the call.

The food consists of insects, and caterpillars are a favourite article of diet, enormous quantities being eaten.

This bird was not observed after the second week in September.

Eight eggs average ·72 × ·53, and vary in length from ·73 to ·70, in width from ·54 to ·51. (See Plate V. fig. 9.)

EUDYNAMIS HONORATA.

The Koël is a common summer visitor, and on rare occasions remains for the winter as well, but then only on the coast. These birds first appear from the south about March 8, and the main body about the middle of that month. In addition to those which spend the summer a large number pass through to parts further north, and on the return journey the birds are most numerous during October.

The call of the Koël is very well known and advertises its arrival in the district at once, but at times, especially after dark, it was heard to utter a dissyllabic note, quite different from its usual diurnal one. On these occasions the Grackles also began to call, making considerable noise.

In southern China, as Swinhoe was aware, this Cuckoo lays its eggs in the nests of the Grackle (*Graculipica nigricollis*). The eggs of the Koël have been found from May 7 until August 1, so that a considerable number are probably laid in a season. Although it is usual for one egg of a Koël to be found with a clutch of the Grackle, two, three, and four have been at different times obtained. On one occasion four eggs were found in a Grackle's nest, all of which from their measurements and appearance were almost certainly those of one Koël.

As far as could be ascertained, there was never any attempt on the part of the young Koël to eject the young Grackles from their rightful tenement, and the latter were frequently observed to be fed along with the former by the foster parents.

The eggs average 1·32 × ·90; they vary in length from 1·40 to 1·24, and in width from ·97 to ·87.

Centropus sinensis.

This, the larger of the two Crow-Pheasants, is an exceedingly common bird at Hong Kong, Macao, and on the Kwang Tung coast generally, but it becomes less abundant further inland, though found in the breeding-season near Kwei Hsien and below Shau Kwan, on the North River. The note is quite characteristic—a loud "hoo! hoo! hoo!" repeated at intervals, and especially noticeable in the spring and summer, although to be heard in the winter also.

This bird has another note, a low clucking sound, which may be peculiar to the female, and is not heard except at the breeding-season. The "hoo! hoo!" sound the bird makes with the bill almost, if not quite closed, its head thrust downwards and forwards.

Although given to skulking, this Crow-Pheasant is more frequently seen than the smaller species; indeed, the two sexes may be often observed in amorous chase of one another in the nuptial season.

The food is chiefly grasshoppers, of which the crop contains at times extraordinary numbers.

In the early morning the birds have been seen perched on swaying bamboos overhanging the river, where they come down to drink.

We are indebted to Mr. J. Power, Imperial Maritime Customs, for the only eggs of this species obtained. On June 30 a nest and two fresh eggs were brought to him by a grass-cutter on the island of Tong Ho. The nest was described as a ball of coarse grass, but it had practically fallen to pieces before it reached him. The two eggs averaged 1·33 × 1·10.

Centropus bengalensis.

The smaller Crow-Pheasant cannot be considered a common bird like the last, and was only noticed at Wuchau and on the outskirts of the forest at Howlik, at Shekwan Bay, and on one of the small outlying islands off the river's mouth. Along the river it appeared to favour the hilly country only. Swinhoe found it at Hong Kong, but it does not occur there now, or only very rarely.

On June 16 a nest with four slightly incubated eggs was found by a woman cutting grass on the Howlik Mountain. The nest was a loose ball of coarse flags and elephant-grass, and was placed in dense elephant-grass. The eggs averaged 1·09 × ·98.

PALÆORNIS TORQUATA.

The occurrence of this Parroquet is possibly of somewhat recent date, and it may be that it was accidentally introduced at Hong Kong. There is no doubt, however, that this species is now very well established at Hong Kong, though it was not noticed from 1900 to 1903. It has also been observed at Macao, and possibly at Wuchau. These birds can be seen in various parts of the island of Hong Kong, and observations made at the Naval Hospital enabled a fair idea to be formed as to their habits, which are exceedingly regular.

The birds seen at the Naval Hospital made a practice of arriving from the westward and perching in the banyan-trees about 7 A.M., and again at about 5 P.M., but the last-named visit they sometimes omitted.

There is no doubt that this species breeds at Hong Kong, for family parties have been noticed as early as the end of May. The Parroquets remain at Hong Kong all through the year except during January and February.

Fortune, the botanist, states that he shot a Parroquet at Canton about 1841.

CIRCUS PYGARGUS.

Montagu's Harrier is a rare winter visitor to Kwang Tung, and was seen once in December up the North River, and again on the coast in March near Deep Bay.

CIRCUS ÆRUGINOSUS.

Marsh Harriers are not uncommon during the winter months, when they haunt the many large marshes in the Delta country.

ASTUR CUCULOIDES.

This bird was obtained once only, at Howlik, on May 6, when, with wings and tail expanded, it was drying itself on the top of a bamboo. Its stomach was full of the remains of frogs.

ACCIPITER NISUS.

Sparrow-Hawks are common winter visitors to Hong Kong and the neighbouring coast, as well as to the West River. They appear about the middle of October and leave again about the middle of April. When very cold weather occurs in January and February their numbers seem to increase at Hong Kong.

On March 1, one of these birds was seen to dash into a little low bush at the Hong Kong Naval Hospital and snatch a sitting Sparrow from among a dozen others, and make off with it, all in a few seconds. On another occasion, attracted by the light, one flew into a well-lighted ward at the Hong Kong Naval Hospital, and was there captured.

ACCIPITER VIRGATUS.

The Chinese Sparrow-Hawk has only occurred once, on March 10, at Shiu Hing, near Samshui.

BUTEO PLUMIPES.

Buzzards are, in some rare cases, apparently resident, and have been seen in the Kowloon Peninsula and at Hong Kong in May and June, but as a general rule they do not become abundant until about October and November, when numbers arrive for the winter. They are usually solitary or in pairs, and in Hong Kong do not seem to confine themselves to regular tracts of country, as they were noticed to do in some of the rural districts.

They are never seen quartering over the harbour looking out for garbage, after the fashion of the Black-eared Kite, from which also they are easily distinguished by their rounded tails and mewing cry.

AQUILA CHRYSAËTUS.

Golden Eagles were seen from time to time, usually alone, and most often at Howlik. On one occasion two were observed on a pine-tree, whence *Chibia hottentotta* drove one away, a thing seen to occur on other occasions also. There was no evidence that these Eagles were breeding.

Mr. J. C. Kershaw, on May 25, for several hours observed four Eagles soaring together and screaming.

BUTASTUR INDICUS.

This Buzzard-faced Eagle is a not uncommon winter visitor to some parts of the country, both on the coast and inland. Arriving in September and early October, it remains until April, and during its stay each one confines itself to a special tract of country over which it quarters in search of food, usually fish.

This species does not often perch in a tree, preferring the paths between the paddy-fields, or the stone walls which shut these off from the river.

HALIAËTUS LEUCOGASTER.

The White-bellied Sea-Eagle is not common, but it does occur on the Kwang-Tung coast and appears to be a resident there. One pair of these birds was watched for four years and found to roam from Macao to Hong Kong, a distance of forty miles.

On an island about twenty miles from Macao, a nest of this species was found; it was an immense collection of sticks, among boulders on the hill-side, so situated that no climb was necessary to reach it. The nest measured seven feet by two and a half, and although no part of it could be called a cup, on one portion there was some paddy straw and a few fresh green leaves. In the following year, on March 14, two addled eggs were found in it, and the nest now contained many pieces of bamboo, and there was a very flat sort of cup of the flowering tops of certain reeds and an abundance of fresh green leaves. The eggs appeared to have been deserted some time.

HALIASTUR INDUS.

These birds were only observed during the summer months in the Province of Kwang-Si, where they appeared to take the place of *Milvus melanotis.*

It is as well, however, to note that in winter it is impossible for the gunboats to proceed above Wuchau, to the westward of which these birds were observed.

MILVUS MELANOTIS.

The Black-eared Kite is a very common bird on the Kwang Tung coast, its numbers being much greater during the winter than at other times. Of those which remain all through the year only a very limited number are breeding-birds, and these, almost without exception, nest in the vicinity of the sea.

At all times it may be seen hawking over the harbour at Hong Kong, picking up all sorts of floating refuse, and on such material it chiefly feeds, but it has been known to attack and kill a wounded small bird on occasion.

Black-eared Kites display a most astonishing partiality for certain sites, especially during the winter, and in such they collect in great numbers, by day and night. A "kitery," to coin a word, may be a clump of large trees, a mountain top, or even a small knoll or kopje, but in any case it is plentifully littered with feathers and white with droppings. The same favoured spots are made use of year after year, and as the birds frequenting one of them may number a couple of hundred, and as they do not appear to wander very far afield, it is wonderful how they all find sufficient food.

In south-eastern China, with rare exceptions, the Black-eared Kite places its nest in a tree, frequently a good-sized fir, but it has been found on rocks as well. The nest, which the birds always build themselves, and never appropriate from any other species, is made externally of sticks, often of considerable size, and lined with the most heterogeneous assortment of materials imaginable: paper, rags, human hair, Chinese caps, towels, pieces of flannel, feathers, chicken bones, and raw cotton, all have been found, and as these usually hang over the sides, they give it a very disreputable appearance. They display considerable attachment to their nesting-sites and tend to return to their old nests, or at any rate to the vicinity thereof. This is also the case with *Corvus torquatus,* and Crows and Kites not infrequently are nesting neighbours, between whom considerable enmity always exists.

The eggs, either two or three in number, but never more, are laid as early in the year as January but more often in February or March. This species is not double brooded. At the nest it is not demonstrative, unless it has young, and then it may become very bold, and on one occasion a Chinese climber was struck on the head by one of these birds and blood was drawn by the blow. The Chinese have been known to take the eggs for food.

The eggs vary in length from 2·41 to 2·06, and in breadth from 1·84 to 1·66, whilst they average 2·18 × 1·70.

PERNIS PTILONORHYNCHUS.

One specimen was obtained at Macao as it was going to roost on a hill covered with trees, where the Kites often resort for the night.

FALCO PEREGRINUS.

Falco communis Gm.; Sharpe, Cat. B.M. i. p. 376.

Peregrine Falcons are fairly common visitors in autumn, winter and spring to Hong Kong, Macao, and the West River. At Hong Kong they never remain long, but at several places on the West River they single out some island on which to take up a permanent winter station.

Some of these birds seem to live chiefly on Teal, but others have been known to attack Pond Herons, and at one place, a rocky point was white with their feathers.

One was seen at Kwei Hsien in July, a pair up the North River at the same time of the year, and a fourth at the Great Rapids, in Kwang Si; so that in favoured spots this species may breed in south-eastern China.

At Howlik a specimen was seen on April 23, by which date most Peregrines have departed.

FALCO SUBBUTEO.

The Hobby is a resident species on the West River and inland generally, but on the coast it only occurs as a rather uncommon winter visitor, and at Hong Kong it is quite rare. At Wing On, about three miles from Howlik, there is a pine wood on the summit of a hill, which gives a fine view of the surrounding country, and here Hobbies congregate in numbers, after the fashion of the Black-eared Kites. On September 5 over forty were seen at this place together; possibly they were young birds waiting to migrate.

Although these birds are largely insectivorous, they also attack birds and mammals; they are not always successful, for one was seen to stoop half a dozen times at a White-faced Wagtail and to miss each time; eventually it gave it up in disgust; others were noticed to make unavailing attacks on a Swallow and a Bat.

This bird breeds in south-eastern China from the second week in June until the end of July, and three eggs seem to be the usual clutch, though sometimes four or two are sat upon. Addled eggs are common, and a solitary young bird in a nest is not unusual.

It cannot be said that the Hobby makes a nest, and indeed it is but seldom that it even lines one. On one occasion a nest of this bird was seen on a small tree which juts out from the second storey of an old pagoda situated right in the great city of Shiu Hing, where, however, the Hobbies were perfectly safe and inaccessible. The eggs are generally laid, as at home, in or on an old nest of the Magpie, or that of the Collared Crow, more frequently the former, whilst on one occasion the Grackle (*Graculipica nigricollis*) had been the original architect. Usually the dome of the Magpie's nest is flattened down and the eggs are laid on the bare sticks, but occasionally a lining of pine needles is found, which is often no doubt accidental; on other occasions the eggs are laid on the old lining of the nest under the hood, the entrance being enlarged a good deal.

The Hobby does not at all mind how old or tumble-down the Magpie's nest may be, holes through the side or bottom are no drawback to it as a residence. On one occasion a Crow's nest was found which had been relined with pine needles, and as it was a nest of the year, this was apparently done by the Hobbies themselves. On another occasion a Magpie had hatched off in a nest and it was then appropriated by a Mynah, which reared its young there, and finally, on the latter's old cup the Hobby laid its eggs.

The male bird usually sits up in a neighbouring tree and keeps watch whilst the hen is sitting, and when the eggs are taken both birds swoop round the tree squealing and screaming; when they have young they are even more violent. They will follow for a mile or two, screaming, after their eggs have been taken.

Cerchneis tinnunculus.

Kestrels occur commonly on the West River and on the sea-coast of Kwang Tung from October to April, arriving about the second week of the former, and leaving about the end of the latter month.

A few apparently remain inland to breed, and on April 29 Staff-Surgeon C. E. Cortis Stanford, R.N., took eggs from a hole in a cliff on the North River. At Kwei Hsien in Kwang Si a pair of these birds was seen on July 15, so they probably breed in some of the rocks or caves there.

Cerchneis amurensis.

The Eastern Red-footed Falcon is seen every spring, both in the Delta and on the lower reaches of the West River, but it is not in evidence during the autumn. In some years these birds are far more plentiful than in others.

Pandion haliaëtus.

Ospreys are winter visitors to the Kwang Tung littoral, and in some years are much more abundant than others. They are frequently noticed soaring, either singly or in pairs, round some hill-top, or sitting on a boulder; but it is doubtful if they ever pick up anything to eat on these occasions. Buzzards and Kestrels have been seen to dash at them and drive them away.

The sea-shore, and especially the land-locked harbours of the New Territory, has great attractions for them; for here there are many fishing stations, with their great quadrangular dipping nets, and their little fishermen's huts built of straw and perched on piles.

When the nets slowly emerge, to the creaking of the bamboo winch and the cry of the workers, the Osprey is not at all averse to stealing a meal from their contents. It may be seen sitting for hours on stakes in tidal waters without attempting to swoop at any fish.

KETUPA CEYLONENSIS.

Although this Owl was not met with by the writers, it was observed by Swinhoe and Kershaw.

BUBO IGNAVUS.

The Great Eagle Owl was found to be widely distributed both on the coast and up the river, but individuals are not plentiful, nor are they very readily seen. The large amount of game required by this Owl probably prevents it becoming very numerous. Early in May an immature bird of this species, in the forest at Howlik, permitted itself to be scrutinized for twenty-five minutes at a range of about ten feet, whilst a gun was brought to shoot it with. An adult at Hong Kong allowed almost as long an inspection, but at considerably greater distance.

These instances of apparent stupidity may be due to the well-known fearlessness of this Owl. It appeared to breed sparingly in the forest of Howlik, but the nest was not discovered—only the fully-fledged young bird mentioned above. Kershaw thought it bred on the boulder-strewn hills near Macao, but he has taken no eggs.

SCOPS STICTONOTUS.

This Scops Owl occurs on the coast especially during the autumn migration, but it is not common.

SCOPS GLABRIPES.

Scops elegans Cass.; Sharpe, Cat. B. M. ii. p. 87.

This fine Scops is undoubtedly the most common Owl found at Hong Kong and in the adjacent mainland; it was not met with elsewhere.

The call is a gentle "Hoo!" repeated at intervals. The food, from the contents of the stomach and from the pellets found under trees in which it had nested, appears to consist of Coleoptera and of small mammals such as mice and shrews.

It is strictly nocturnal and very stupid in daylight, for it will sit outside the Magpie's nest in which it has deposited its eggs and allow itself to be shot, or permit a climber to come within a few feet of it before it will budge. Out of seven clutches of eggs of this species which were taken, all except one were placed in Magpies' nests. That not so placed was the only clutch which was not taken by one of the writers, though from careful comparison of the eggs there is little doubt as to their identity. In this case they were laid in a hole in a steep bank of disintegrated sandstone, and there was no nest. The first clutch was taken on April 22, 1902, and the eggs were on the point of hatching; but eggs were taken well-incubated in the first and second weeks of May, and some as early as April 7, which were well sat upon, so that from the end of March until the middle of May is probably the breeding-season. The usual clutch seems to be three, but two and five eggs sometimes occur in a nest.

Apparently this Owl does not begin to sit until the complete clutch has been laid, for all eggs from the same nest appear to be in the same stage of incubation. Although undoubtedly an old Magpie's nest is generally made use of, at times this Owl will seize on a new one in which the Magpie is about to lay, and which it has freshly renovated and lined for that purpose.

Twenty-one eggs average 1·40 × 1·20, and vary in length from 1·48 to 1·34, and in breadth from 1·24 to 1·18.

GLAUCIDIUM WHITELYI.

This little Owl is a common resident species on the river, both in Kwang Tung and Kwang Si, but it does not occur, or only rarely, on the coast. These birds are often flushed from clumps of bamboo when Pigeons are being shot. The note is a loud chir-r-r-r-r! which commencing with a liquid sound, is followed by continually more rapid notes until a continuous "chur" results. The eggs are laid in March, or early in April, and as a rule a hollow tree or branch is chosen for their reception, but sometimes a good nest is made; at times the deserted domicile of the Magpie may also serve, and that of the Mynah has been found appropriated.

On March 31 a pair of these birds was found to have dispossessed a couple of Magpies of their nest, and the male was sitting on a twig close by "churring" loudly, whilst his mate was inside the empty nest. The birds deserted this nest. On April 6 a bird was found sitting on three eggs in a well-made nest of strips of soft bark, placed in a hollow horizontal limb of a large banyan-tree, about ten feet from the ground, and so tightly did she sit that she had to be lifted out by hand squealing like a rat, and scratching and biting lustily. On May 1, up the North River, a clutch of four was taken, but the bird usually lays three eggs.

These Owls may be heard "churring" at all hours of the night and throughout the day as well; they are frequently mobbed in daylight by small birds. Eight eggs average 1·49 × 1·20, and vary in length from 1·57 to 1·38, and in width from 1·27 to 1·16.

ASIO ACCIPITRINUS.

Short-eared Owls occur up the West River most often in the month of April and have, as a rule, been flushed whilst Snipe-shooting in mulberry-canes, or Quail-shooting in long grass.

This species was also met with in January, February, and May, and may be considered a rather scarce but regular spring migrant.

EXPLANATION OF PLATE V.

CHINESE EGGS.

Fig. 1. *Cuculus micropterus.* Macao, 26 May, 1906.
,, 2. *Alcippe hueti.* Howlik, 28 May, 1907.
,, 3. *Parus cinereus.* Near Howlik, 19 May, 1907.
,, 4. *Prinia inornata.* Moto Mun, 2 June, 1907.
,, 5. ,, Tam-chau, 1 August, 1907.
,, 6. *Pericrocotus roseus.* Wu-chau, 1 July, 1907.
,, 7. *Chloris sinica.* Wu-chau, 29 March, 1906.
,, 8. *Burnesia sonitans.* Howlik, 19 May, 1907.
,, 9. *Cacomantis merulinus.* Hong Kong, 25 April, 1908.
,, 10. *Terpsiphone incii.* Tak-hing, 29 May, 1906.
,, 11. *Campophaga melanoptera.* Howlik, 17 June, 1907.

Fig. 12. *Buchanga leucogenys.* Howlik, 16 June, 1907.
„ 13. *Pycnonotus sinensis.* Howlik, 18 May, 1907.
„ 14. *Copsychus saularis.* Howlik, 11 June, 1906.
„ 15. *Lanius collurioides.* Luktau, near Tak-hing, 8 July, 1907.
„ 16. *Chibia hottentotta.* Howlik, 3 June, 1906.
„ 17. *Urocissa erythrorhyncha.* Hong Kong, 4 May, 1908.
„ 18. *Lanius lucionensis.* Shau-kwan (North River), 19 May, 1905.
„ 19. *Limnobænus fuscus.* Sam-shui, 8 August, 1907.
„ 20. *Otocompsa emeria.* Howlik, 5 June, 1904.
„ 21. *Pycnonotus atricapillus.* Macao, 13 May, 1906.
„ 22. *Myiophoneus cæruleus.* Hong Kong, 19 May, 1908.

[To be continued.]

XII.—*A Reference List of the Birds of New Zealand.* Part I.

By Gregory M. Mathews, M.B.O.U., and Tom Iredale.

The preparation of the "Reference List to the Birds of Australia" by one of us necessitated the examination of much New Zealand material, and the more recent investigation into the Petrels of the Southern Hemisphere by the same author during the progress of his 'Birds of Australia,' indicated so many errors in the accepted nomenclature of the birds of New Zealand that the publication of a corrected list seems desirable. The other, having studied the New Zealand Avifauna, both in the field and in the cabinet, had much knowledge regarding the more local fauna. The collaboration will, we trust, place the nomenclature upon a sound basis for future workers. We would point out that this List is entirely new work, in which all the birds have been examined and the references verified and specimens compared. No such work has been done in connection with New Zealand birds since the first issue of Buller's 'Birds of New Zealand' forty years ago, and, unfortunately, since that time little attempt has been made to bring the nomenclature there used into line with that commonly accepted by the scientific world of the present day. As recently as 1906 Buller published his 'Supplement to the Birds of New Zealand,' and therein altered the arrangement

For introduced:

of the higher groupings, so that they should agree with that adopted in the 'Hand-list of Birds' of R. B. Sharpe. That Hand-list, however, mainly utilised the nomenclature introduced by Buller as regards the genera and species of birds in the New Zealand Fauna. Moreover, as it was based on the 12th edition of Linné's 'Systema Naturæ,' 1766, instead of the 10th edition, 1758, as now universally adopted, changes from that cause are necessary. The rigid application of the Law of Priority, which we hold to be absolutely the only road to finality, is the reason for other alterations. We are obliged to state, however, that the majority of the corrections made hereafter cannot be laid to either of the preceding debatable points, but rather to the carelessness of earlier workers. Instead of the descriptions of the birds being carefully read, guesswork appears to have been thought good enough for New Zealand birds. Indeed, it seems to have been quite the usual course when a new or hitherto unnoticed bird was observed, and this is apparent from the writings of Buller, Hutton, and Finsch, each of whom indulged in it in certain cases.

We have endeavoured, therefore, to fix the names so that all workers can check our results, and for that reason have appended explanatory notes to most of the alterations. By this means we hope to make our List fulfil its title.

In fixing the type-localities of the earlier species we had first to unravel Sparrman's connection with New Zealand. This does not seem to have been done before, as it caused us much research to disentangle it. We find that Sparrman accompanied Forster on Cook's Second Voyage, at Forster's expense, as a salaried assistant to the latter. It consequently follows that Sparrman's collection must have been made under Forster's supervision, and after Forster had completed his own wants. We have, therefore, decided to fix as the type-locality of all the species of New Zealand birds described by Sparrman, that absolutely known from Forster's descriptions and Geo. Forster's drawings. This explanation is necessary, as Sparrman gave as locality of many of the birds, "Cape of Good Hope." His names have priority over those of Gmelin, who latinised Latham's descriptions drawn up from

Forster's specimens and manuscript. Forster's own descriptions were not published until almost sixty years afterwards.

Attention must be drawn to our treatment of an article by J. B. Ellman, entitled "Brief Notes on the Birds of New Zealand," which appeared in the 'Zoologist' for 1861, pp. 7464–7473. In that list, birds were recorded from hearsay and sight, and to these Latin names were affixed, some of which were new. Fortunately the majority of these are without description and generally synonyms, and accurately indeterminable. We have therefore not included them in the synonymy, as, though in many cases guesses can be made as to what Ellman meant, there is too much risk and no gain whatever. For instance, Ellman was the first to admit *Procellaria æquinoctialis* to the New Zealand List, but Hutton (Cat. Birds New Zeal. p. 80, 1871) has stated that the bird so determined was *Prion banksi*!

Throughout this List we use trinomials wherever necessary, and would note that we use them for island forms, as we consider they show the relationships most accurately (*cf.* Stone, 'Auk,' 1899, p. 374). The question as to the limits of the New Zealand Region has engaged the attention of both of us, and, after careful consideration from all aspects, we confidently put forward those which have been most generally accepted, viz., Kermadec Islands, North Island, South Island, the Chatham Group, Stewart Island, and the subantarctic Islands to the south; these include the Snares, the Auckland Islands, Antipodes, Bounty, Campbell and Macquarie Islands.

We have *not* included Lord Howe and Norfolk Islands, and have already, individually, put forward our arguments against such inclusion, and we have a full paper in preparation detailing all the facts in support of our views. In that paper much new and interesting information will be utilised.

As Buller's 'Supplement' contains all the Birds of the New Zealand Region and is the latest authority on the subject, we have given a reference to that work so that it will be at once easy to fix the bird named in this List. Almost all the New Zealand birds have been figured in the various editions of Buller's 'Birds of New Zealand,' so that this List is mainly critical and should be used in connection with that work.

Class AVES.

Subclass PALÆOGNATHÆ.

Order APTERYGIFORMES.

Family APTERYGIDÆ.

Genus APTERYX.

Apteryx Shaw & Nodder, Nat. Miscellany, vol. xxiv. 1813, pl. 1057.

Type (by monotypy): *A. australis* Shaw & Nodder.

Apteryx australis australis Shaw & Nodder. South Island Kiwi.

Apteryx australis Shaw & Nodder, Nat. Miscell. vol. xxiv. 1813, pl. 1057: Dusky Sound, South Island.

Synonyms:—

Dromiceius novæzealandiæ Lesson, Manuel d'Ornith. vol. ii. 1828, p. 210: same locality.

? *Apteryx fusca* Potts, Trans. New Zeal. Inst. vol. v. 1873, p. 196, nom. nud.

Apteryx australis Buller, Suppl. vol. i. p. 11.

Range:—South Island (breeding).

Apteryx australis mantelli Bartlett. North Island Kiwi.

Apteryx mantelli Bartlett, Proc. Zool. Soc. for 1850, 1852, p. 275: North Island.

Synonyms:—

Apteryx bulleri Sharpe, Trans. New Zeal. Inst. vol. xxi. 1889, p. 224: North Island.

Apteryx mantelli Buller, Suppl. vol. i. p. 12.

Apteryx bulleri id. ibid. p. 17.

Range:—North Island (breeding).

Note:—Buller retained two forms of *Apteryx australis* as occurring in the North Island, and wrote: "The name of *Apteryx bulleri* seems to me more convenient than the alternative trinomial one of *Apteryx australis bulleri*," adding, "I am old-fashioned enough to be wholly opposed to the trinomial system of nomenclature, now so much in vogue." However, as he admitted that his *A. bulleri* was simply a colour-variation, writing "The range of *Apteryx bulleri* is co-extensive with that of *A mantelli*," it will be seen that our present usage of trinomials will not meet the case. We are not by any means satisfied that the forms of North Island Kiwis and their exact distribution are at present satisfactorily determined.

Apteryx australis lawryi Rothschild. Stewart Island Kiwi.

Apteryx lawryi Rothschild, Bull. Brit. Orn. Club, vol. i. 1893, p. lxi : Stewart Island.

Synonym :—

Apteryx lawryi Buller, Suppl. vol. i. p. 1.

Range :—Stewart Island.

Note :—Though the author of this form has himself rejected it, we think that further research will show the advisability of its retention as a valid subspecies. The majority of well-authenticated specimens show that a larger form is recognisable. *Apteryx maxima* Bonaparte has been well discussed and can certainly be dismissed as indeterminable.

Apteryx haastii Potts. Great Grey Kiwi.

Apteryx haastii Potts, Trans. New Zeal. Inst. vol. iv. 1872, p. 204 : near Okarito, South Island.

Synonym :—

Apteryx haasti Buller, Suppl. vol. i. p. 25.

Range :—West Coast Ranges of South Island (breeding).

Apteryx owenii owenii Gould. Little Grey Kiwi.

Apteryx owenii Gould, Proc. Zool. Soc. 1847, p. 93 : New Zealand.

Synonym :—

Apteryx oweni Buller, Suppl. vol. i. p. 19.

Range :—? Both Islands (breeding).

Apteryx owenii occidentalis Rothschild. West Coast Kiwi.

Apteryx occidentalis Rothschild, Bull. Brit. Orn. Club, vol. i. 1893, p. lxi : West Coast of South Island.

Synonym :—

Apteryx occidentalis Buller, Suppl. vol. i. p. 23.

Range :—West Coast Ranges of South Island (breeding).

Note :—It seems apparent that the forms of the Little Grey Kiwi are not yet understood. Rothschild has admitted an Alpine form living in the South Island of which the type, according to Buller, was obtained at Dusky Sound, South Island. From not far away Potts described *Apteryx mollis* (Trans. New Zeal. Inst. vol. v. 1873, p. 196), viz., Martin Bay, on the west coast of the South Island. This was founded on an albinistic form and has been referred to the synonymy of *A. oweni*, but the measurements given seem to agree better with Rothschild's *A. occidentalis*. Further, though various records from the North Island are extant, it would seem that if *A. owenii* occurs at all in that island it will be in a different form. At any rate, a bird supposed to have been procured in the North Island was once called *A. owenii* and a second time *A. occidentalis*.

Much more work seems necessary before we can be said to know all about the distribution of *Apteryx*.

Subclass NEOGNATHÆ.

Order GALLIFORMES.

Family MEGAPODIDÆ.

Megapodius pritchardi Gray.

Note :—In the 'Supplement,' vol. i. pp. 31–33, Buller included *Megapodius pritchardi* Gray, and, moreover, gave a coloured plate of the adult and chick. The grounds for inclusion were that formerly a mound-building bird had inhabited the crater of Sunday Island, one of the Kermadec Group. The story was second-hand upon Cheeseman's receipt of it (Trans. New Zeal. Inst. vol. xxiii. 1890, p. 219), and consequently valueless from a scientific point of view.

One of the present writers spent almost the whole year 1908 upon Sunday Island, and had the opportunity of hearing all the stories relative to the mythical mound-builder. There can be no doubt that nothing definite whatever can be arrived at regarding this mound-builder, and the assumption that it might have been a Megapode has not even a basis. It could certainly not have been *Megapodius pritchardi,* as that bird *does not build a mound.* Lister (Proc. Zool. Soc. 1911, p. 749 et seq.) has given a detailed history of the genus *Megapodius* in the Pacific, and, independently confirming the present writer's conclusions as to the improbability of such a form occurring at the Kermadecs, wrote : "It therefore seems to me that we have no good evidence that the genus *Megapodius* formerly inhabited the Kermadec Islands, *and absolutely none that* M. pritchardi *lived there.*" The italics are ours.

We might note that Buller included a sentence to the effect (p. 40) that the Pigeon formerly inhabiting the Kermadecs could be accepted as identical with the New Zealand bird. The stories regarding the Pigeon are even more mythical than those regarding the "Mound-builder," and are absolutely unworthy of inclusion in any scientific work.

Family PHASIANIDÆ.

Genus COTURNIX.

Coturnix Bonnaterre, Tabl. Encycl. Méthod., Ornith. vol. i. 1791, p. lxxxvii.

Type (by tautonymy) : *C. coturnix* (Linné).

Coturnix novæzealandiæ Quoy & Gaimard. New Zealand Quail.

Coturnix novæzealandiæ Quoy & Gaimard, Voy. de l'Astrol., Zool. vol. i. 1830, p. 242 : Baie Chouraki, North Island.

Synonym :—

Coturnix novæzealandiæ Buller, Suppl. vol. i. p. 34.

Range :—Formerly both Islands. Now extinct.

Order COLUMBIFORMES.

Family TRERONIDÆ.

Genus HEMIPHAGA.

Hemiphaga Bonaparte, Comptes Rendus Sci. Paris, vol. xxxix. 1854, p. 1076.

Type (by original designation): *H. novæseelandiæ* (Gmelin).

Hemiphaga novæseelandiæ novæseelandiæ (Gmelin). New Zealand Pigeon.

Columba novæseelandiæ Gmelin, Syst. Nat. 1789, p. 773: Dusky Sound, South Island.

Synonyms :—

Columba zealandica Latham, Index Ornith. vol. ii. 1790, p. 703: same locality.

Columba spadicea leucophæa Hombron & Jacquinot, Ann. Sci. Nat. Paris, 2nd ser. vol. xvi. 1841, p. 319: Akaroa, South Island.

Columba argetræa Forster, Descr. Anim. ed. Licht. 1844, p. 80: Dusky Sound, South Island.

Hemiphaga novæzealandiæ Buller, Suppl. vol. i. p. 36.

Range :—Both Islands (breeding).

Hemiphaga novæseelandiæ chathamensis (Rothschild). Chatham Islands' Pigeon.

Carpophaga chathamensis Rothschild, Proc. Zool. Soc. 1891, p. 312: Chatham Islands.

Synonym :—

Hemiphaga chathamensis Buller, Suppl. vol. i. p. 41.

Range :—Chatham Islands (breeding).

Order RALLIFORMES.

Family RALLIDÆ.

Genus RALLUS.

Rallus Linné, Syst. Nat. 10th ed. 1758, p. 153.

Type (by subsequent designation): *R. aquaticus* Linné.

Rallus muelleri Rothschild. Auckland Islands' Rail.

Rallus muelleri Rothschild, Bull. Brit. Orn. Club, no. viii. 1893, p. xli: Auckland Islands.

Synonym :—

Hypotænidia muelleri Buller, Suppl. vol. i. p 42.

Range :—Auckland Islands.

Note :—The specimen recorded by Von Hügel ('Ibis,' 1875, p. 393) as *Rallus brachypus* from the Auckland Islands is preserved in the Rothschild Museum, Tring, where it has been examined by us. It undoubtedly belongs to the East Australian race of *Rallus pectoralis* Temminck, as has been already pointed out by one of us (Mathews, Birds Austr. vol. i. 1911, p. 185, footnote), and it seems strange that it should have occurred on the islands where there is now (though possibly extinct) resident a closely allied but degenerate relation, and to us the record seems too obscure for admission to the New Zealand List. It should be noted that *Rallus muelleri* is an aberrant member of the genus, though it has no claim to be included in the genus *Hypotænidia.*

Genus CABALUS.

Cabalus Hutton, Trans. New Zeal. Inst. vol. vi. 1874, p. 108.

Type (by monotypy) : *C. modestus* (Hutton).

Cabalus modestus (Hutton). Little Chatham Islands' Rail.

Rallus modestus Hutton, Ibis, 1872, p. 217 : Chatham Islands.

Synonym :—

Cabalus modestus Buller, Suppl. vol. i. p. 45.

Range :—Chatham Islands (breeding).

Note :—With regard to this species Buller wrote : "The curvature of the bill is more pronounced in the larger (presumably the male) bird, being very similar to that of the Moeriki (*Cabalus dieffenbachi*), as figured in the 'Transactions of the New Zealand Institute' (vol. vi. p. 12), but more slender, and I feel confirmed in the opinion that the two species are referable to one and the same genus, although, for the sake of consistency, I now follow Dr. Sharpe in referring the latter to the genus *Nesolimnas*." When Dr. Andrews introduced the genus *Nesolimnas* he was writing about the "Extinct Birds of the Chatham Islands," and there advocated the theory of parallelism of evolution to account for the similarity of the Chatham Islands (extinct) *Diaphoroapteryx* to the Mauritian *Aphanapteryx*. It may be of interest to here note some facts which seem to confirm the theory of convergence with regard to these Rails which have or are developing flightlessness.

The present form is descended from a species of *Rallus*, such as *Rallus pectoralis*, and, in addition to its flightless wings, the bill has become longer and more curved. The bird from Auckland Islands, *Rallus muelleri*, is an intermediate stage, not so advanced as *Cabalus modestus*, but still noticeably differing from *Rallus pectoralis* in structure, though it closely resembles it in coloration. The other Chatham Island Rail, *Nesolimnas dieffenbachii*, which Buller would associate with *C. modestus* on account of the curved bill, retains in a marked degree the coloration of *Hypotænidia philippensis*, and there can be little doubt that it is derived from a near relation of that species. The curved bill is quite like that of the last-named, while the Macquarie Island Rail is in an intermediate stage, the bill in that form being slightly more curved than in the New Zealand race of *H. philippensis*. It should be noted that this race (*H. p. assimilis*) is characterised by its longer bill and degenerate wing-formation. The bills of *Nesolimnas* and *Cabalus* are, in our opinion, of different origin, but we hope to have more to say regarding these degenerate Rails later.

Genus HYPOTÆNIDIA.

Hypotænidia Reichenbach, Nat. Syst. Vögel, 1852, p. xxiii. Type (by original designation): *H. philippensis* (Linné).

Hypotænidia philippensis assimilis (Gray). New Zealand Buff-banded Rail.

Rallus assimilis Gray, in Dieffenbach's Travels in New Zealand, vol. ii. 1843, p. 197: North Island.

Synonyms:—

Rallus pictus Potts, Trans. New Zeal. Inst. vol. i. 1872, p. 202: Okarito, South Island.

Hypotænidia philippensis Buller, Suppl. vol. i. p. 43 (part.). [The type-locality of *Rallus philippensis* Linné, Syst. Nat. 12th ed. 1766, p. 263, is Philippine Islands.]

Range:—Both Islands (breeding).

Note:—We have not sufficient material to decide whether *Rallus pictus* Potts deserves recognition, but from our studies in this species (Mathews, Birds Austr. vol. i. 1911, pp. 193–199) we anticipate its separation.

Hypotænidia philippensis macquariensis (Hutton). Macquarie Island Rail.

Rallus macquariensis Hutton, Ibis, 1879, p. 455: Macquarie Islands.

Range:—Macquarie Islands (breeding).

Genus NESOLIMNAS.

Nesolimnas Andrews, Nov. Zool. vol. iii. 1896, p. 266. Type (by monotypy): *N. dieffenbachii* (Gray).

Nesolimnas dieffenbachii (Gray). Chatham Islands' Rail.

Rallus dieffenbachii Gray, in Dieffenbach's Travels in New Zealand, vol. ii. 1843, p. 197: Chatham Islands.

Synonym:—

Nesolimnas dieffenbachi Buller, Suppl. vol. i. p. 44.

Range:—Formerly Chatham Islands. Now extinct. Unique example in the British Museum (Nat. Hist.).

Genus GALLIRALLUS.

Gallirallus Lafresnaye, Revue Zool. 1841, p. 243. Type (by monotypy): *G. brachypterus* Lafresnaye.

Gallirallus australis australis (Sparrman). Brown Wood-Hen.

Rallus australis Sparrman, Museum Carlson. 1786, fasc. i. no. xiv.: Dusky Sound, South Island.

Synonyms:—

Rallus troglodytes Gmelin, Syst. Nat. 1789, p. 713: Dusky Sound, South Island.

Ocydromus earli Gray, Ibis, 1862, p. 238: Dusky Sound, South Island; Buller, Suppl. vol. i. p. 52.

Range:—South Island (breeding).

Gallirallus australis greyi (Buller). North Island Wood-Hen.

Ocydromus greyi Buller, Birds New Zeal. 2nd ed. 1888, p. 105: North Island.

Synonym:—

Ocydromus greyi Buller, Suppl. vol. i. p. 47.

Range:—North Island (breeding).

Gallirallus australis scotti (Grant). Stewart Island Wood-Hen.

Ocydromus scotti Grant, Bull. Brit. Orn. Club, vol. xv. 1905, p. 78: Stewart Island.

Range:—Stewart Island (breeding); Macquarie Island (introduced).

Gallirallus brachypterus Lafresnaye. Black Wood-Hen.

Gallirallus brachypterus Lafresnaye, Revue Zool., Aug. 1841, p. 243: Dusky Sound, South Island.

Synonyms:—

Gallirallus fuscus Du Bus, Esquisses Ornith. 1847, pl. ii.: same locality.

Ocydromus nigricans Buller, Trans. New Zeal. Inst. vol. i. 1869, p. 111: same locality.

? *Ocydromus finschi* Hutton, Trans. New Zeal. Inst. vol. vi. 1874, p. 110: south-eastern Otago.

Ocydromus brachypterus Buller, Suppl. vol. i. p. 61.

Range:—South-west Coast, South Island (breeding).

Gallirallus hectori (Hutton). South Island Wood-Hen.

Ocydromus hectori Hutton, Trans. New Zeal. Inst. vol. vi. 1874, p. 110: Te Anau, South Island.

Synonyms:—

Ocydromus australis Buller, Suppl. vol. i. p. 58.
Ocydromus hectori id. ib. p. 60.

Range:—South Island (breeding).

Note:—The Wood-Hens of New Zealand constitute a most puzzling group, and though such ornithologists as Buller, Finsch, Newton, Sharpe, and Hutton have all attempted to unravel the puzzle, apparently none ever tried to fix the correct nomenclature to be used for the forms they recognised. When one reads of these authors placing *O. hectori* and *O. brachypterus* as pure synonyms, though one is described as *black*, the other as *yellow*, a great confusion can be anticipated. It is not astonishing, then, to find that the well-known generic name *Ocydromus* is untenable, being pre-occupied (*cf.* Iredale, Nov. Zool. vol. xviii. 1911, p. 22). The next trouble is the correct identification of Sparrman's *Rallus australis*: the description reads "*Corpus supra ferrugineo-fuscum, subtus cinereo-ferrugineum.*"

This is certainly applicable to Forster's *Rallus troglodytes*, which was procured at Dusky Sound. Gmelin's *Rallus troglodytes* is a translation of Latham's Troglodyte Rail (Gen. Synops., Birds, vol. iii. pt. i. p. 229. no. 3). This article is headed "Lev. Mus.," and his description is drawn up from Forster's accounts and agrees fairly well with this Sparrman bird, but a note is added "That in the Leverian Museum has the upper parts of a deep chestnut . . . the underparts cinereous verging to chestnut on the breast." We consider this should be accepted as fixing the form, and consequently Gmelin's *Rallus troglodytes* becomes an absolute synonym of Sparrman's *Rallus australis*. In confirmation of this identification, we find Latham, in his Suppl. Gen. Synops. vol. i. 1787, p. 255, wrote: "The figure in the above work (Sparrman, Mus. Carlson. pl. 11, *Rallus australis*) answers to my description of it (Troglodyte

Rail, Gen. Syn. vol. iii. pt. i. p. 229. no. 3), except that it wants the white streak over the eye." Unfortunately the preceding descriptions do not refer to the bird commonly known as *O. australis*, but to the species recognised as *O. earli* Gray. Finsch and Hutton at times recognised this, but they appear to have been overruled by Buller. In connection with the forms recognised it is worth notice that *G. australis* ranges through the North, South, and Stewart Islands in slightly differentiated subspecific forms.

We have closely studied *G. brachypterus* Lafresnaye, and consider that it is a fixed melanistic form which only occurs in the south-west of the South Island and must consequently be admitted as of specific rank. It shows to us signs of descent from *G. australis*. The common South Island Wood-Hen must for the present bear the name *G. hectori*, which was proposed by Hutton for an alpine form which longer series may show worthy of separation.

It is obvious that here again we have not yet reached the truth as to the distribution and forms of Wood-Hen recognisable in New Zealand. The few specimens we have been able to examine are more misleading than helpful. We write "few" advisedly, as a large number become reduced to few when the extent and nature of New Zealand are considered. A range 12,000 feet high must constitute a big barrier to a flightless bird, while the climate of the plains and south-west ranges differs entirely.

[Genus CREX.

Crex Bechstein, Ornith. Taschenb. vol. ii. 1803, p. 336.
Type (by tautonymy): *C. crex* (Linné).

Crex crex (Linné). Land-Rail.

Rallus crex Linné, Syst. Nat. 10th ed. 1758, p. 153: Europe (Sweden).

Synonym:—

Rallus featherstonii Buller, Essay Ornith. New Zeal. 1865, p. 18, footnote: New Zealand.

Range:—New Zealand (one occurrence); extralimital.

Note :—At the place cited, Buller described a New Zealand specimen, but since then it has been ignored, but no explanation for its omission given. The recent record of a specimen in New South Wales points to the acceptance of the New Zealand occurrence.]

Genus PORZANA.

Porzana Vieillot, Analyse nouv. Ornith. 1816, p. 61.

Type (by monotypy) : *P. porzana* (Linné).

Porzana pusilla affinis (Gray). Marsh-Rail.

Ortygometra affinis Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 14 : Nanganui (*sic*) River, North Island.

Synonym :—

Porzana affinis Buller, Suppl. vol. i. p. 63. [The type-locality of *Rallus pusillus* Pallas, Reise Russ. Reichs, vol. iii. 1776, p. 700, is Transbaikalia.]

Range :—Both Islands (breeding).

Genus PORZANOIDEA.

Porzanoidea Mathews, Austral Avian Rec. vol. i. 1912, p. 117.

Type (by original designation) : *P. immaculata* (Swainson).

Porzanoidea plumbea plumbea (Gray). Swamp-Rail.

Crex plumbea Gray in Griffith's ed. Cuvier's Animal Kingdom, vol. iii. 1829, p. 410 : New Zealand.

Synonym :—

Porzana plumbea Buller, Suppl. vol. i. p. 63.

Range :—Both Islands (breeding) ; Chatham Islands.

Genus PORPHYRIO.

Porphyrio Bonnaterre, Tabl. Encycl. Méthod., Ornith. vol. i. 1791, p. xciv.

Type (by tautonymy) : *P. porphyrio* (Linné).

Porphyrio melanotus stanleyi Rowley. Swamp-Hen.

Porphyrio stanleyi Rowley, Ornith. Miscell. vol. i. 1875, p. 37 (albino): New Zealand.

Synonym:—

Porphyrio melanonotus Buller, Suppl. vol. i. p. 64, pars. [The type locality of *P. melanotus* Temminck, Manuel d'Ornith. 2nd ed. vol. ii. 1820, p. 701, is New South Wales.]

Range:—Both Islands (breeding).

Porphyrio melanotus chathamensis Sharpe. Chatham Islands' Swamp-Hen.

Porphyrio chathamensis Sharpe, Cat. Birds Brit. Mus. vol. xxiii. 1893, p. 202: Chatham Islands.

Synonym:—

Porphyrio melanonotus Buller, Suppl. vol. i. p. 64, pars.

Range:—Chatham Islands (breeding).

Genus MANTELLORNIS.

Mantellornis Mathews, Birds Australia, vol. i. 1911, p. 249. Type (by original designation): *M. hochstetteri* (Meyer).

Mantellornis hochstetteri (Meyer). Takahe.

Notornis hochstetteri Meyer, Abbild. Vögel-Skelet. Lief. iv. & v. 1883, p. 28: South Island.

Synonym:—

Notornis mantelli Buller, Suppl. vol. i. p. 66.

Range:—South-west coast of South Island. Four specimens only are on record, killed at intervals of seventy years. The first, Dusky Sound, 1849; second, Secretary Island, 1857; third, eastern shore of Lake Te Anau, 1879; fourth, Lake Te Anau shores, 1899. There are credible accounts of specimens having been procured and seen since that date, so that there is not much basis for calling it "extinct," though this certainly will soon be the case.

At the place cited, Mathews has gone fully into the matter of the generic and specific names of this interesting bird, and we are agreed that the name here used is the correct one.

Genus FULICA.

Fulica Linné, Syst. Nat. 10th ed. 1758, p. 152.

Type (by subsequent designation) : *F. atra* Linné.

Fulica atra tasmanica Grant. Eastern Australian Coot.

Fulica tasmanica Grant, Tasm. Journ. Science, vol. ii. 1846, p. 310 : Tasmania.

Synonym :—

> *Fulica australis* Buller, Suppl. vol. i. p. 75. [The type-locality of *Fulica atra* Linné, Syst. Nat. 10th ed. 1758, p. 152, is Sweden, and of *Fulica australis* Gould, Proc. Zool. Soc. 1845, p. 2, is Western Australia.]

Range:—New Zealand (accidental visitor: one occurrence· Lake Waihora, South Island, July 1899) : extralimital.

Note :—Buller in the 'Supplement,' vol. i. p. 75, included ? *Fulica novæzealandiæ* Colenso (Tasm. Journ. Science, 1845, p. 283 : Waikato, North Island), partly on account of Sharpe's admission of the species in the 'Hand-list.' It is quite obvious that neither had studied the description. which is, however, reproduced by Buller, as it is at once obvious that Colenso's bird was not a Coot and is only applicable, and exactly, to the New Zealand Dabchick (see *post.*).

Order PODICIPIFORMES.

Family PODICIPIDÆ.

Genus PODICEPS.

Podiceps Latham, General Synops. Birds, Suppl. vol. i. 1787, p. 294.

Type (by subs. design.) : *P. cristatus* (Linné).

Note :—In the Novitates Zool. vol. xvii. 1910, p. 494, the usage of *Podiceps* for the Grebes was reviewed by one of us. The method of restriction there utilised in determining the generic names of the Grebes has been questioned, and direct type designation quoted as of more importance. In the Amer. Ornith. Union's Check-List, 3rd ed. 1910, p. 21, *Colymbus* is used for the Grebes, the type of *Colymbus* Linné, 1758, being given as *Colymbus cristatus* by subsequent designation by the A.O.U. Committee in 1886.

However, in making this designation, the A. O. U. Committee must have overlooked the fact that Gray in the Cat. Gen. & Subgen. Birds, 1855, p. 125, had selected as type of "*Colymbus* Linn. 1735 *nec* 1766, *C. arcticus* Linn."

The direct statement that it is not the type of Linné 1766 but of Linné 1735 necessitates its acceptance as the type of Linné 1758. This is obvious to anyone conversant with Gray's methods of working, and as *C. arcticus* is the first species of *Colymbus* Linné 1758, this must be accepted as the type. We are certain that American ornithologists will now consent to accept this as finally settling a matter which has been a bone of contention for too many years.

Podiceps cristatus australis (Gould). New Zealand Crested Grebe.

Podiceps australis Gould, Proc. Zool. Soc. 1844, p. 135 : New Zealand.

Synonyms :—

Podiceps hectori Buller, Essay New Zeal. Ornith. 1865, p. 19 : New Zealand.

Lophæthyia cristata Buller, Suppl. vol. i. p. 76. [The type-locality of *Colymbus cristatus* Linné, Syst. Nat. 10th ed. 1758, p. 135, is Sweden.]

Range :—Both Islands (breeding).

Note :—One of us (Mathews, Birds Austr. vol. i. p. 269) has shown that Gould described the New Zealand bird, which is quite easily separable from the European form.

Genus POLIOCEPHALUS.

Poliocephalus Selby, Cat. Gen. Subgen. Types Aves, 1840, p. 47.

Type (by monotypy): *P. poliocephalus* (Jardine & Selby).

Poliocephalus rufopectus (Gray). New Zealand Dabchick.

Podiceps (*Poliocephalus*) *rufopectus* Gray in Dieffenbach's Travels in New Zealand, vol. ii. 1843, p. 119 : North Island.

Synonyms :—

Fulica novæzealandiæ Colenso, Tasm. Journ. Sci. vol. ii. 1845, p. 283 : North Island.

Podiceps rufipectus Buller, Suppl. vol. i. p. 76.

Range :—Both Islands (breeding).

Order SPHENISCIFORMES.

Family SPHENISCIDÆ.

Genus APTENODYTES.

Aptenodytes Miller, Var. Subj. Nat. Hist. 1778, pl. 23.
Type (by monotypy): *A. patagonica* Miller.

Aptenodytes patagonica halli Mathews. King Penguin.

Aptenodytes patagonica halli Mathews, Birds Austr. vol. i. 1911, p. 272; Macquarie Island.

Synonym:—

Aptenodytes patagonica Buller, Suppl. vol. i. p. 78. [The type-locality of *Aptenodytes patagonica* Miller, *loc. cit.*, is South Georgia.]

Range:—New Zealand Seas; Macquarie Island (breeding).

Genus PYGOSCELIS.

Pygoscelis Wagler, Isis, 1832, p. 281.
Type (by monotypy): *P. papua* (Forster).

Pygoscelis papua tæniata (Peale). Rock-Hopper.

Aptenodytes tæniata Peale, U.S. Expl. Exped., Birds, 1848, p. 264: Macquarie Island.

Synonym:

Pygoscelis papua Buller, Suppl. vol. i. p. 84. [The type-locality of *Aptenodytes papua* Forster, Comment. Götting. vol. iii. 1781, p. 140, is Falkland Islands.]

Range:—Macquarie Islands (breeding).

Genus EUDYPTES.

Eudyptes Vieillot, Analyse nouv. Ornith. 1816, pp. 67, 70.
Type (by subsequent designation): *E. chrysocome* (Forster).

Note:—When one of us (Mathews) in 'The Birds of Australia,' vol. i. 1911, p. 276, used *Penguinus* Brünnich to replace *Catarractes* Brisson (non-binomial), the reviewer, "J. A. A.," in 'The Auk' (vol. xxix. 1912, p. 124), wrote: "If *Penguinus* was founded on an indeterminable species, the genus itself must necessarily share the fate of the species on which it was founded." With this dictum we agree and would note that in rejecting *Penguinus*, recourse cannot be had to *Catarractes* (ex Brisson), as that genus is absolutely coequal with *Penguinus*. The next name is *Eudyptes* Vieillot, which was introduced with two sections, and the second of these was designated as type by Gray in 1840 : the first section being equal to *Spheniscus*. We have therefore to revert to the familiar *Eudyptes* for the Crested Penguins.

Eudyptes chrysocome chrysocome (Forster). Crested Penguin.

Aptenodytes chrysocome Forster, Comment. Götting. vol. iii. 1781, p. 135 : Tasmania.

Synonyms :—

Pinguinaria cirrhata Shaw in Miller's Cimelia Physica, 1796, p. 92 : same bird.
Aptenodytes cristata Miller, id. ib. pl. xlix. : same bird.
? *Eudyptes vittata* Finsch, Ibis, 1875, p. 113 : Dunedin.
Catarrhactes chrysocome Buller, Suppl. vol. i. p. 84.
? *Catarrhactes vittatus* Buller, Suppl. vol. i. p. 95.

Range :—New Zealand (? breeding on the south-west coast) ; Antipodes Island (breeding) ; ? Macquarie Island (breeding).

Eudyptes chrysocome pachyrhynchus Gray. Victoria Penguin.

Eudyptes pachyrhynchus Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 17 : Waikowaiti, South Island.

Synonyms :—

Eudyptes atrata Finsch, Ibis, 1875, p. 114 : Snares Island.
Catarrhactes pachyrhynchus Buller, Suppl. vol. i. p. 86.

Range :—New Zealand Seas ; Snares Island (breeding).

Eudyptes chrysocome sclateri Buller. Big-crested Penguin.

Eudyptes sclateri Buller, Birds New Zeal. 2nd ed. vol. ii. 1888, p. 289 : Auckland Islands.

Synonym :—

Catarrhactes sclateri Buller, Suppl. vol. i. p. 88.

Range :—New Zealand Seas ; Auckland Island (breeding) ; ? Bounty Island (breeding).

Eudyptes chrysocome filholi Hutton. Campbell Island Crested Penguin.

Eudyptes filholi Hutton, Proc. Linn. Soc. N.S.W. vol. iii. 1878, p. 334: Campbell Island.

Range:—Campbell Island (breeding).

Eudyptes schlegeli Finsch. Macaroni Penguin.

Eudyptes schlegeli Finsch, Trans. New Zeal. Inst. vol. viii. 1876, p. 204: Macquarie Island.

Synonyms:—

Eudyptes albigularis Milne-Edwards, Ann. Sci. Nat. Paris, ser. vi. vol. ix. 1880, p. 55: Macquarie Island.
Catarrhactes schlegeli Buller, Suppl. vol. i. p. 90.
? *Catarrhactes chrysolophus* Buller, Suppl. vol. i. p. 94.

Range: New Zealand Seas; Macquarie Island (breeding).

Note:—A careful reading of Buller's 'Supplement' clearly shows the confusion in which the forms of Penguins stand. Material is not available for a thorough revision of the group; while Waite, in the 'Birds of the Subantarctic Islands of New Zealand' (vol. ii. 1909, pp. 576–580), made confusion worse confounded, the reason being fully explained by the author's introductory note (p. 551): "While on the islands I did not pay the special attention to the birds I would have done had I known what would later have been required of me . . . . consequently I have little material for purposes of identification or description." It would seem from Buller's very mixed accounts (such sentences occurring on the same page about the same birds as this, "It has never, I believe, been found on the Auckland Islands . . . . Of this species, hitherto only known as occurring on the Auckland Islands.") that each breeding-place is probably occupied by a distinct subspecies. Series are required to work out these birds, and a beautiful paper by Milne-Edwards (cited above) appears to have been somewhat overlooked. In that he showed that Filhol's series from the Campbell Islands were constant, and constituted a recognisable subspecies. The Macquarie Island *P. schlegeli* is the New Zealand representative (but seemingly specifically distinct) of the Falkland

Island *P. chrysolophus*, and Buller's records of that species may have been reversionary cases.

Genus MEGADYPTES.

Megadyptes Milne-Edwards, Ann. Sci. Nat. Paris, ser. vi. vol. ix. 1880, p. 56.

Type (by monotypy) : *M. antipodes* (Hombron & Jacquinot).

Megadyptes antipodes (Hombron & Jacquinot). Yellow-crowned Penguin.

Catarrhactes antipodes Hombron & Jacquinot, Ann. Sci. Nat. 2nd ser. vol. xvi. 1841, p. 320 : Auckland Islands.

Synonyms :

Aptenodytes flavilarvata Peale, U.S. Expl. Exped., Birds, 1848, p. 260 : Auckland Islands.

Megadyptes antipodum Buller, Suppl. vol. i. p. 94.

Range :—South Island (Otago, breeding) ; Auckland Islands (breeding) ; Campbell Islands (breeding).

Genus EUDYPTULA.

Eudyptula Bonaparte, Comptes Rendus Sci. Paris, vol. xlii. 1856, p. 775.

Type (by monotypy): *E. minor* (Forster).

Eudyptula minor minor (Forster). Blue Penguin.

Aptenodytes minor Forster, Comment. Götting. vol. iii. 1781, p. 147 : Dusky Sound, South Island.

Synonym :

Eudyptula undina Buller, Suppl. vol. i. p. 96.

Range : Both Islands (breeding).

Eudyptula minor albosignata Finsch. White-flippered Penguin.

Eudyptula albosignata Finsch, Proc. Zool. Soc. 1874, p. 207 : Akaroa, South Island.

Synonym :

Eudyptula minor Buller, Suppl. vol. i. p. 96.

Range: South Island (Banks' Peninsula, breeding).

Eudyptula minor iredalei Mathews. Chatham Islands' Little Penguin.

Eudyptula minor iredalei Mathews, Birds Australia, vol. i. 1911, p. 286, pl. 67 : Chatham Islands.

Range : Chatham Islands (breeding).

Order PROCELLARIIFORMES.

Family HYDROBATIDÆ.

Genus OCEANITES.

Oceanites Keyserling & Blasius, Wirbelth. Europa's, 1840, p. xciii.

Type (by monotypy) : *O. oceanicus* (Kuhl).

Oceanites oceanicus exasperatus Mathews. Australian Yellow-webbed Storm-Petrel.

Oceanites oceanicus exasperatus Mathews, Birds Austr. vol. ii. 1912, p. 11 : New Zealand Seas.

Synonym :—

Oceanites oceanicus Buller, Suppl. vol. i. p. 97. [The type-locality of *Procellaria oceanica* Kuhl, Beitr. Zool. Vergl. Anat. 1820, p. 136, is South Atlantic Ocean.]

Range :—New Zealand Seas ; Cape Adare, Victoria Land (breeding).

Genus GARRODIA.

Garrodia Forbes, Proc. Zool Soc. 1881, p. 735.

Type (by monotypy) : *G. nereis* (Gould).

Garrodia nereis nereis (Gould). Grey-backed Storm-Petrel.

Thalassidroma nereis Gould, Proc. Zool. Soc. for 1840, 1841, p. 178 : Bass's Straits, Australia.

Synonym :—

Garrodia nereis Buller, Suppl. vol. i. p. 98.

Range :—New Zealand (breeding) ; Chatham Islands (breeding) ; Auckland Islands (breeding).

Genus PEALEA.

Pealea Ridgway, Auk, vol. iii. 1886, p. 334.

Type (by original designation) : *P. lineata* (Peale).

Pealea lineata (Peale). Samoan Storm-Petrel.

Thalassidroma lineata Peale, United States Expl. Exped., Birds, 1848, p. 293 : Island of Upolu.

Range :—New Zealand Seas. (Two specimens only known from New Zealand waters : one obtained off East Cape, North Island in 1829 by the 'Astrolabe' Expedition ; the other off Banks' Peninsula, South Island, presented to the British Museum. May breed off New Zealand ?)

Genus PELAGODROMA.

Pelagodroma Reichenbach, Nat. Syst. Vögel, 1852, p. iv.

Type (by original designation) : *P. marina* (Latham).

Pelagodroma marina maoriana Mathews. New Zealand White-faced Storm-Petrel.

Pelagodroma marina maoriana Mathews, Birds Austr. vol. ii. 1912, p. 24 : Chatham Islands.

Synonym :—

Pelagodroma marina Buller, Suppl. vol. i. p. 98. [The type-locality of *Procellaria marina* Latham, Index Ornith. vol. ii. 1790, p. 826, is South Atlantic Ocean.]

Range :—New Zealand : Chatham Islands (breeding) ; Auckland Islands (breeding) ; ? Kermadec Islands.

Genus FREGETTA.

Fregetta Bonaparte, Comptes Rendus Sci. Paris, vol. xli. 1855, p. 1113.

Type (by original designation) : *F. leucogaster* (Gould).

Fregetta tropica melanogaster (Gould). Black-bellied Storm-Petrel.

Thalassidroma melanogaster Gould, Annals Mag. Nat. Hist. vol. xiii. 1844, p. 367 : South Indian Ocean.

Synonym :—

Fregetta melanogaster Buller, Suppl. vol. i. p. 99. [The type-locality of *Thalassidroma tropica* Gould, Annals Mag. Nat. Hist. vol. iii. 1844, p. 366, is Equatorial Atlantic Ocean.]

Range :—New Zealand Seas ; Australian Seas and South Indian Ocean.

Note :—The breeding-place of the New Zealand form is yet unknown, though probably the Chatham Islands (*cf.* Buller, Birds New Zeal. 1873, p. 319) harbours a subspecies quite distinct from the South Indian Ocean bird (Mathews, Birds Austr. vol. ii. 1912, p. 36).

Family PROCELLARIIDÆ.

Genus REINHOLDIA.

Reinholdia, Mathews, Austral Avian Record, vol. i. 1912, p. 107.

Type (by original designation): *R. reinholdi* (Mathews).

Reinholdia reinholdi reinholdi (Mathews). Brown-backed Petrel.

Puffinus reinholdi reinholdi Mathews, Birds Austr. vol. ii. 1912, p. 74: New Zealand (Hauraki Gulf).

Synonym :—

Puffinus gavia Buller, Suppl. vol. i. p. 99.

Range :—New Zealand (breeding) ; New South Wales (twice).

Note :—Much confusion exists regarding the distribution of this bird. Reischek (Trans. New Zeal. Inst. vol. xviii. 1886, p. 94) gives an account of a bird breeding on Hauturu Island, while Sandager (*op. cit.*, vol. xxii. 1890, p. 289) records rather different habits for the same (?) bird breeding on the Mokohinou Islands; finally Buller wrote in the Supplement "We have *at length* discovered the breeding-place of this species, viz. Stephen's Island, Cook's Straits," and then on p. 104 records this same Stephen's Island breeding bird under the name *Puffinus tenuirostris* (Bonaparte's Shearwater) ; this must be absolutely wrong.

Reinholdia reinholdi huttoni (Mathews). Snares Brown-backed Petrel.

Puffinus reinholdi huttoni Mathews, Birds Austr. vol. ii. 1912, p. 77 : Snares Island.

Range :—Snares Island (breeding) ; South Australia (one occurrence).

Genus PUFFINUS.

Puffinus Cuvier, Règne Animal, vol. i. 1816, p. 516.

Type (by tautonymy) : *P. puffinus* (Brünnich).

Puffinus assimilis assimilis Gould. Allied Petrel.

Puffinus assimilis Gould, Synops. Birds Austr. pt. iv. 1838, App. p. 7 : Norfolk Island.

Synonyms :—

Puffinus affinis Penny Cyclopedia, vol. xviii. 1840, p. 42. Error for *P. assimilis*.

Puffinus australis Gould, Birds Austr. vol. vii. 1848, text to pl. 59 : Norfolk Island.

Puffinus assimilis Buller, Suppl. vol. i. p. 100 (part only).

Range :—Kermadec Islands (breeding) ; Norfolk Island (breeding) ; Lord Howe Island (breeding).

Puffinus assimilis gavia (Forster). New Zealand Allied Petrel.

Procellaria gavia Forster, Descr. Anim. ed. Licht. 1844, p. 148 : Queen Charlotte's Sound, South Island.

Synonym :—

Puffinus assimilis Buller, Suppl. vol. i. p. 100 (in part).

Range :—New Zealand (breeding).

Note :—One of us (Mathews, Birds Austr. vol. ii. 1912, pp. 50–77) has gone carefully into the matter of the "black and white" Shearwaters, and has clearly shown the misapplication of Forster's name. When Hutton (Cat. Birds New Zeal. 1871, pp. 45 & 79) first utilised it, he had no knowledge that a form of *P. assimilis* inhabited New Zealand, and the misapplication has been continuous, even when specimens of the latter species were obtained at the type locality of Forster's species. The notes under the species of the genus *Puffinus* in Buller's 'Supplement,' vol. i. pp. 99–105, are in hopeless confusion, and no reliance can be placed upon them as being referable to the species they are recorded against.

Puffinus assimilis kempi Mathews. Chatham Islands' Allied Petrel.

Puffinus assimilis kempi Mathews, Birds Austr. vol. ii. 1912, p. 69: Chatham Islands.

Range:—Chatham Islands (breeding).

Puffinus bulleri Salvin. Ashy-backed Wedge-tailed Petrel.

Puffinus bulleri Salvin, Ibis, 1888, p. 354: New Zealand.

Synonyms:—

Puffinus zealandicus Sandager, Trans. New Zeal. Inst. vol. xxii. 1890, p. 291: Mokohinou Island.

Puffinus bulleri Buller, Suppl. vol. i. p. 101.

Range:—New Zealand Seas. Breeding-place unknown.

Puffinus pacificus pacificus (Gmelin). Kermadec Wedge-tailed Petrel.

Procellaria pacifica Gmelin, Syst. Nat. 1789, p. 560: Pacific Ocean, breeding at Kermadec Islands.

Synonyms:—

Puffinus chlororhynchus iredali Mathews, Bull. Brit. Orn. Club, vol. xxvii. 1910, p. 40: Kermadec Islands.

Puffinus chlororhynchus Buller, Suppl. vol. i. p. 105.

Range:—Kermadec Islands (breeding).

Note:—Mathews (Birds Austr. vol. ii. 1912, p. 79) has given full particulars regarding this synonymy.

Puffinus griseus griseus (Gmelin). Sombre Petrel or Mutton-Bird.

Procellaria grisea Gmelin, Syst. Nat. 1789, p. 564: New Zealand.

Synonyms:—

Procellaria tristis Forster, Descr. Anim. ed. Licht. 1844, p. 205: New Zealand.

Puffinus griseus Buller, Suppl. vol. i. p. 102.

Range:—New Zealand (breeding), probably not in North

Island ; ? Chatham Islands ; ? Auckland Islands ; ? Snares. The exact distribution needs working out.

Puffinus carneipes carbonarius Mathews. New Zealand Flesh-footed Petrel.

Puffinus carneipes carbonarius Mathews, Birds Austr. vol. ii. 1912, pp. 90–91 : off Three Kings, North Island.

Synonym :—

Puffinus carneipes Buller, Suppl. vol. i. p. 103. [The type-locality of *Puffinus carneipes* Gould, Annals Mag. Nat. Hist. vol. xiii. 1844, p. 365, is south-western Australia.]

Range :—New Zealand (breeding) ; ? North Island only.

Puffinus tenuirostris brevicauda Gould. Short-tailed Petrel.

Puffinus brevicaudus Gould, Birds Austr. vol. vii. 1847, pl. 56 : Green Island, Bass's Straits.

Synonym :—

? *Puffinus tenuirostris* Buller, Suppl. vol. i. p. 104. [The type-locality of *Procellaria tenuirostris* Temminck & Laugier, Planch. Color. d'Ois. 99^{e} livr. 1836, pl. 58, is Japanese Seas.]

Range ;—New Zealand Seas (accidental occurrences) ; Southern Australia (breeding).

Note :—It is very doubtful whether this species has occurred in New Zealand waters. Buller's notes in the 'Supplement' do *not* refer to this bird, but Hutton's record (Proc. Zool. Soc. 1893, p. 749) of a washed-up Kermadec specimen may belong here. No authentic record of its breeding in New Zealand is to be found.

In the Suppl. vol. i. p. 100 is included *Puffinus obscurus*. One of us (Mathews, Birds Austr. vol. ii. 1912, pp. 62 & 73) has dealt with the specimen upon which the entry is based and has suggested that there may be a breeding-form of *Puffinus lherminieri* in New Zealand, but no specimens are at hand and the history of the supposed New Zealand bird is unreliable. We are, therefore, compelled to omit it, but would again draw attention to the need of investigating the breeding-colonies of the 'black and white' Shearwaters around New Zealand.

Genus PROCELLARIA.

Procellaria Linné, Syst. Nat. 10th ed. 1758, p. 131.
Type (by subsequent designation): *P. æquinoctialis* Linne

Procellaria æquinoctialis steadi Mathews. New Zealand White-chinned Petrel.

Procellaria æquinoctialis steadi Mathews, Birds Austr. vol. ii. 1912, p. 114: Antipodes Island.

Synonym:—

Majaqueus æquinoctialis Buller, Suppl. vol. i. p. 109. [The type-locality of *Procellaria æquinoctalis* Linné, Syst. Nat. 10th ed. 1758, p. 132, is Cape Seas.]

Range:—Antipodes and Auckland Islands (breeding).

Procellaria parkinsoni Gray. Black Petrel.

Procellaria parkinsoni Gray, Ibis, 1862, p. 245: New Zealand.

Synonym:—

Majaqueus parkinsoni Buller, Suppl. vol. i. p. 109.

Range:—New Zealand (breeding), both islands.

Genus PRIOFINUS.

Priofinus Hombron & Jacquinot, Comptes Rendus Sci. Paris, vol. xviii. 1844, p. 355.
Type (by monotypy): *P. cinereus* (Gmelin).

Priofinus cinereus (Gmelin). Grey Petrel.

Procellaria cinerea Gmelin, Syst. Nat. 1789, p. 563: New Zealand Seas (lat. 48° S.).

Synonyms:—

Procellaria gelida Gmelin, Syst. Nat. 1789, p. 546: same locality.

Procellaria melanura Bonnaterre, Tabl. Encycl. Méthod., Ornith. vol. i. 1790, p. 79: same locality.

Procellaria hæsitata Forster, Descr. Anim. ed. Licht. 1844, p. 208: same locality.

Adamastor typus Bonaparte, Consp. Gen. Av. vol. ii. 1857, p. 187: new name for preceding.

Procellaria adamastor Schlegel, Mus. Pays-Bas, vol. vi. Procell. 1863, p. 23: another name for same form.

(The preceding synonymy has been fully explained in Mathews' Birds Austr. vol. ii. 1912, p. 121.)

Priofinus cinereus Buller, Suppl. vol. i. p. 106.

Range:—New Zealand Seas (scarce straggler), extralimital.

Genus PRIOCELLA.

Priocella Hombron & Jacquinot, Comptes Rendus Sci. Paris, vol. xviii. 1844, p. 357.

Type (by monotypy): *P. antarctica* (Stephens).

Priocella antarctica (Stephens). Silver-grey Petrel.

Fulmarus antarcticus Stephens in Shaw's Gen. Zool. vol. xiii. 1826, p. 236: Cape Seas.

Synonyms:—

Procellaria glacialoides Smith, Illus. Zool. South Afr., Aves, 1840, pl. 51: Cape Seas.

Priocella garnotii Hombron & Jacquinot, Comptes Rendus Sci. Paris, vol. xviii. 1844, p. 357: same locality.

Thalassoica polaris Bonaparte, Consp. Gen. Av. vol. ii. 1857, p. 192: nomen nudum.

Procellaria smithi Schlegel, Mus. Pays-Bas, vol. vi. Procell 1863, p. 22: new name for same bird.

Priocella glacialoides Buller, Suppl. vol. i. p. 108.

Range:—New Zealand Seas (scarce straggler); extralimital.

Genus PTERODROMA.

Pterodroma Bonaparte, Comptes Rendus Sci. Paris, vol. xlii. 1856, p. 768.

Type (by subsequent designation): *P. macroptera* (Smith).

Pterodroma macroptera gouldi (Hutton). New Zealand Grey-faced Petrel.

Æstrelata gouldi Hutton, Ibis, 1869, p. 351: New Zealand.

Synonyms :—

Œstrelata gouldi Buller, Suppl. vol. i. p. 111.

Œstrelata fuliginosa Buller, Suppl. vol. i. p. 118. [The type-locality of *Procellaria macroptera* Smith, Illus. Zool. South Afr., Aves, 1840, pl. 52, is Cape Seas.]

Range :—New Zealand (breeding).

Note :—Mathews (Birds Austr. vol. ii. 1912, p. 130) has clearly shewn that *Pterodroma* must be used instead of the more familiar *Œstrelata*.

Pterodroma lessonii leucocephala (Forster). Eastern White-headed Petrel.

Procellaria leucocephala Forster, Descr. Anim. ed. Licht. 1844, p. 206 : Australian Seas.

Synonym :—

Œstrelata lessoni Buller, Suppl. vol. i. p. 111. [The type-locality of *Procellaria lessonii* Garnot, Ann. Sci. Nat. Paris, vol. vii. 1826, p. 54, footnote, is Cape Horn.]

Range :—New Zealand Seas ; Antipodes Island (breeding) ; Auckland Islands (breeding).

Note :—In the Suppl. vol. i. p. 112, Buller included *Œstrelata incerta* with the remark, "The 'Doubtful Petrel' having been finally accepted by Mr. Salvin may now be regarded as a valid species. But, apart from this fact, I fear I have nothing to add to its history, no further New Zealand specimens having come to my knowledge." No authentic specimens have ever been procured in New Zealand waters, nor is it likely that any ever will be, seeing that *P. incerta* Schlegel is a South Atlantic species with, as far as is yet known, a quite restricted habitat. One of us (Mathews, Birds Austr. vol. ii. pp. 149–151, 1912) has detailed the history of the names *P. alba* Gmelin and *P. sandaliata* Solander, and has come to the conclusion that they are both founded on the same specimen and refer to this species; as a consequence, the correct name would be *P. alba* (Gmelin), but it must be omitted from the New Zealand list, as was pointed out by Finsch (Trans. New Zeal. Inst. vol. vii. 1875, p. 233) almost forty years ago.

Pterodroma neglecta neglecta (Schlegel). Kermadec Islands' Petrel.

Procellaria neglecta Schlegel, Mus. Pays-Bas, vol. vi. Procell. 1863, p. 10: Kermadec Islands.

Synonyms :—

Œstrelata leucophrys Hutton, Proc. Zool. Soc. 1893, p. 752, pl. lxiii. : Kermadec Islands.
Œstrelata mollis Buller, Suppl. vol. i. p. 112.
Œstrelata neglecta id. ib. p. 115.
Œstrelata phillipi id. ib. p. 119.

Range :—Kermadec Islands (breeding).

Note :—There is considerable confusion regarding this species in Buller's Supplement, as can be seen from the above synonymy. The notes under *Œ. mollis* (save this, "I have another example in my collection from Otago") refer to this species; the bird noted (p. 113) is also not referable to *Œ. mollis*. The matter under *Œ. neglecta* all refers to this species, but Buller quotes conflicting accounts without comment, while under *Œ. phillipi* he includes a note by Hutton written in 1893, though Hutton had retracted his recognition later and this is quoted on p. 116. One of us (Iredale, Proc. Linn. Soc. N.S.W. vol. xxxv. 1910, p. 780, 1911) has shown that *P. phillipi* Gray could not be used for this bird; and more recently the other (Mathews, Birds Austr. vol. ii. 1912, p. 141 *et seq.*) has shown the true value of that name.

Pterodroma externa cervicalis (Salvin). Sunday Island Petrel.

Œstrelata cervicalis Salvin, Ibis, 1891, p. 192: Kermadec Islands.

Synonym :—

Œstrelata cervicalis Buller, Suppl. vol. i. p. 114. [The type-locality of *Œ. externa* Salvin, Ibis, 1875, p. 373, is Mas-a-fuera of the Juan Fernandez group.]

Range :—Kermadec Islands (breeding).

Pterodroma inexpectata inexpectata (Forster). Mottled Petrel.

Procellaria inexpectata Forster, Descr. Anim. ed. Licht. 1844, p. 204.

Synonyms:—

Procellaria gularis Peale, United States Expl. Exped. 1848, p. 299: lat. 68° S., long. 95° W.

Procellaria affinis Buller, Trans. New Zealand Inst. vol. vii. 1875, p. 215: Pott. River, Otago.

Procellaria lugens Solander, *cf.* Mathews, Birds Austr. vol. ii. 1912, p. 159: lat. 59°, south of Tierra del Fuego.

Œstrelata gularis Buller, Suppl. vol. i. p. 117.

Range:—New Zealand (breeding).

Genus COOKILARIA.

Cookilaria Bonaparte, Comptes Rendus Sci. Paris, vol. xliii. 1856, p. 994.

Type (by subsequent designation): *C. cookii* (Gray).

Cookilaria cookii cookii (Gray). Blue-footed Petrel.

Procellaria cookii Gray in Dieffenbach's Travels in New Zealand, vol. ii. 1843, p. 199: New Zealand.

Synonym:—

Œstrelata cooki Buller, Suppl. vol. i. p. 118.

Range:—New Zealand (breeding), ? both Islands.

Cookilaria cookii axillaris (Salvin). Chatham Islands' Blue-footed Petrel.

Œstrelata axillaris Salvin, Bull. Brit. Orn. Club, vol. i. 1893, p. xxxiii: Chatham Islands.

Synonym:—

Œstrelata axillaris Buller, Suppl. vol. i. p. 119.

Range:—Chatham Islands (breeding).

Cookilaria cookii nigripennis (Rothschild). Kermadec Blue-footed Petrel.

Œstrelata nigripennis Rothschild, Bull. Brit. Orn. Club, vol. i. 1893, p. lvii: Kermadec Islands.

Synonym :—

Œstrelata nigripennis Buller, Suppl. vol. i. p. 113.

Range :—Kermadec Islands (breeding).

Genus MACRONECTES.

Macronectes Richmond, Proc. Biol. Soc. Wash. vol. xviii. 1906, p. 76.

Type (by original designation) : *M. giganteus* (Gmelin).

Macronectes giganteus albus (Potts). New Zealand Giant Petrel.

Ossifraga alba Potts, Trans. New Zeal. Inst. vol. vi. 1874, p. 152 : off Centre Island, Foveaux Straits, South Island, New Zealand.

Synonym :—

Ossifraga gigantea Buller, Suppl. vol. i. p. 120 (part.).

Range :—New Zealand Seas, Chatham Islands (? breeding) ; Antipodes Islands and Campbell Islands (? breeding).

Macronectes giganteus wilsoni Mathews. Antarctic Giant Petrel.

Macronectes giganteus wilsoni Mathews, Birds Austr. vol. ii. 1912, p. 189 : Ross Sea, Antarctica.

Synonym :—

Ossifraga gigantea Buller, Suppl. vol. i. p. 120 (part.). [The type-locality of *Procellaria gigantea* Gmelin, Syst. Nat. 1789, p. 563, is Staten Island off Cape Horn.]

Range :—Antarctic Seas (? Macquarie Island, breeding).

Note :— There is a form of *Macronectes giganteus* breeding at the Macquarie Islands, and specimens from that locality agree better with the Antarctic form than with the New Zealand race, so that for the present we refer them to the former.

Genus DAPTION.

Daption Stephens in Shaw's Gen. Zool. vol. xiii. pt. i. 1826, p. 239.

Type (by original designation) : *D. capense* (Linné).

Daption capense (Linné). Cape Petrel.

Procellaria capensis Linné, Syst. Nat. 10th ed. 1758, p. 132: Cape of Good Hope.

Synonym:—

Procellaria pardela Oken, Lehrb. für Naturg. vol. iii. Zool. 1816, p. 533: Cape Seas.
Daption capensis Buller, Suppl. vol. i. p. 122.

Range:—New Zealand Seas; ? Snares Island (breeding); extralimital.

Genus THALASSOICA.

Thalassoica Reichenbach, Nat. Syst. Vögel, 1852, p. xiv. Type (by original designation): *T. antarctica* (Gmelin).

Thalassoica antarctica (Gmelin). Antarctic Petrel.

Procellaria antarctica Gmelin, Syst. Nat. 1789, p. 565: in the Antarctic Circle.

Synonym:—

Thalassœca antarctica Buller, Suppl. vol. i. p. 108.

Range:—New Zealand Seas (? one occurrence); extralimital.

Genus HALOBÆNA.

Halobæna Bonaparte, Comptes Rendus Sci. Paris, vol. xlii. 1856, p. 768.

Type (by monotypy): *H. cærulea* (Gmelin).

Halobæna cærulea (Gmelin). Blue Petrel.

Procellaria cærulea Gmelin, Syst. Nat. 1789, p. 560: Southern Ocean.

Synonyms:—

Procellaria forsteri (not Latham) Smith, Ill. Zool. South Africa, 1840, pl. liii.: Cape Seas.
Procellaria similis Forster, Descr. Anim. ed. Licht. 1844, p. 59: Southern Ocean.
Halobæna cærulea Buller, Suppl. vol. i. p. 122.

Range:—New Zealand Seas (two occurrences: Cape Campbell, South Island; North Island); extralimital.

Genus PACHYPTILA *.

Pachyptila Illiger, Prodromus, 1811, p. 274.

Type (by subsequent designation): *P. vittatus* (Gmelin).

Pachyptila vittatus vittatus (Gmelin). New Zealand Broad-billed Prion.

Procellaria vittata Gmelin, Syst. Nat. 1789, p. 560: New Zealand.

Synonyms:—

Procellaria forsteri Latham, Index Ornith. vol. ii. 1790, p. 827: new name for *P. vittata* Gmelin.

Procellaria latirostris Bonnaterre, Tabl. Encycl. Méthod., Orn. vol. i. 1791, p. 81: New Zealand.

Prion magnirostris Gould, Proc. Zool. Soc. 1862, p. 125: New Zealand.

Prion australis Potts, Ibis, 1873, p. 85: Foveaux Straits, South Island.

Prion vittatus Buller, Suppl. vol. i. p. 123.

Range:—New Zealand Seas: Chatham Islands (breeding); Foveaux Straits (breeding); Dusky Sound, South Island (breeding).

Genus PSEUDOPRION.

Pseudoprion Coues, Proc. Acad. Nat. Sci. Philad. 1866, p. 164.

Type (by original designation): *P. turtur* (Kuhl).

Pseudoprion turtur huttoni Mathews. Dove-Petrel.

Pseudoprion turtur huttoni Mathews, Birds Austr. vol. ii. 1912, p. 220: Chatham Islands.

Synonyms:—

Prion desolatus Buller, Suppl. vol. i. p. 124.

Prion brevirostris Buller, Suppl. vol. i. p. 125.

Prion ariel Buller, Suppl. vol. i. p. 126. [The type-locality of *Procellaria turtur* Kuhl, Beitr. Zool. vergl. Anat. 1820, p. 143 is Bass' Straits, from which locality *Halobæna typica* Bonaparte, Consp. Gen. Av. vol. vi. Procell. p. 18, 1863, was also described; while *Prion brevirostris* Gould, Proc. Zool. Soc. 1855, p. 88, is supposed to have come from Madeira (*cf.* Mathews, *loc. cit.*)]

Range:—New Zealand Seas: Chatham Islands (breeding);

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* *Prion* Lacepède, Tableau Oiseaux, 1799, p. 14, is indeterminable.

? Stephens Island (breeding); ? Antipodes Island (breeding).

Pseudoprion turtur crassirostris Mathews. Bounty Islands Dove-Petrel.

Pseudoprion turtur crassirostris Mathews, Birds Austr. vol. ii. 1912, p. 221: Bounty Island.

Range: Bounty Island (breeding); ? Snares (breeding).

Genus HETEROPRION.

Heteroprion Mathews, Birds Austr. vol. ii. 1912, p. 222.

Type (by original designation): *H. belcheri* Mathews.

Heteroprion desolatus alter Mathews. Auckland Islands' Dove-Petrel.

Heteroprion desolatus alter Mathews, Birds Austr. vol. ii. 1912, p. 227: Auckland Islands.

Synonym:—

Prion banksi Buller, Suppl. vol. i. p. 124. [The type-locality of *Procellaria desolata* Gmelin, Syst. Nat. 1789, p. 562, is Kerguelen Island.]

Range:—New Zealand Seas, Auckland Islands (breeding).

Heteroprion desolatus macquariensis Mathews. Macquarie Islands' Dove-Petrel.

Heteroprion desolatus macquariensis Mathews, Birds Austr. vol. ii. 1912, p. 227: Macquarie Islands.

Range:—Macquarie Islands (breeding).

Family PELECANOIDIDÆ.

Genus PELECANOIDES.

Pelecanoides Lacepède, Tableau Oiseaux, 1799, p. 13.

Type (by monotypy): *P. urinatrix* (Gmelin).

Pelecanoides urinatrix urinatrix (Gmelin). Diving Petrel.

Procellaria urinatrix Gmelin, Syst. Nat. 1789, p. 560: Queen Charlotte's Sound, South Island.

Synonyms :—

Procellaria tridactyla Forster, Descr. Anim. ed. Licht., 1844, p. 149 : Queen Charlotte's Sound, South Island.

Pelecanoides urinatrix Buller, Suppl. vol. i. p. 126.

Pelecanoides exsul id. ib. p. 127. [*Pelecanoides exsul* was described from Kerguelen Island by Salvin (Cat. Birds Brit. Mus. vol. xxv. 1896, p. 438) and must be restricted to the form of *P. urinatrix* nesting on that island.]

Range :—New Zealand (breeding).

Note :—Buller constantly recognised two forms of Diving Petrel as breeding in New Zealand. His latest acceptance gave the following discontinuous distribution :—Smaller form, North and South Islands, Chatham Island and Snares ; larger form, Stephens Island, South Island, Karewa Island, North Island, and Auckland Island. Examination of specimens supposedly from New Zealand suggests the occurrence of more than one form, but sufficient authentic material is not at hand to diagnose these, and limit their ranges. The second name chosen by Buller is not available, as shown above, and neither is *Procellaria berard* proposed by Quoy and Gaimard (Voy. 'Uranie' et 'Physic,' Zool. vol. i. 1824, p. 135), which was introduced for the Falkland Island bird (*cf.* Mathews, Birds Austr. vol. ii. 1912, pp. 234–239).

Family DIOMEDEIDÆ.

Genus DIOMEDEA.

Diomedea Linné, Syst. Nat. 10th ed. 1758, p. 132.
Type (by subs. design.) : *D. exulans* Linné.

Diomedea exulans rothschildi Mathews. Australian Wandering Albatros.

Diomedea exulans rothschildi Mathews, Birds Austr. vol. ii. 1912, p. 246 : Australian Seas.

Synonym :—

Diomedea exulans Buller, Suppl. vol. i. p. 128. [The type-locality of *Diomedea exulans* Linné, Syst. Nat. 10th ed. 1758, p. 132, is Cape Seas.]

Range : New Zealand Seas : Antipodes Islands (breeding), Auckland Islands (breeding), ? Chatham Islands (breeding).

Diomedea epomophora epomophora Lesson. Campbell Island Royal Albatros.

Diomedea epomophora Lesson, Annales Sci. Nat. Paris, 1st ser. vol. vi. 1825, p. 95: Campbell Island.

Synonym:—

Diomedea regia Buller, Trans. New Zeal. Inst. 1891, vol. xiii. 1892, p. 230; Otago and Campbell Island; Buller, Suppl. vol. i. p. 138 (part.).

Range: New Zealand Seas—Campbell Island (breeding).

Diomedea epomophora mccormicki Mathews. Enderby Island Royal Albatros.

Diomedea epomophora mccormicki Mathews, Birds Austr. vol. ii. 1912, p. 216: Auckland Islands.

Synonym:—

Diomedea regia Buller, Suppl. vol. i. p. 138 (part.).

Range:—Enderby Island, Auckland Group (breeding).

Note:—Mathews (*l. c.*) has shewn that *D. regia* Buller, at best, was a mixture of the two preceding forms; whilst Lesson's name is certain and has over sixty years priority.

Genus THALASSARCHE.

Thalassarche Reichenbach, Nat. Syst. Vögel, 1852, p. v.

Type (by original designation): *T. melanophris* (Temminck).

Thalassarche melanophris impavida Mathews. Australian Black-browed Mollymawk.

Thalassarche melanophris impavida Mathews, Birds Austr. vol. ii. 1912, p. 267: Tasmania.

Synonym:—

Diomedea melanophrys Buller, Suppl. vol. i. p. 146. [The type-locality of *Diomedea melanophris* Temminck & Laugier, Planch. Color. d'Ois. 76 livr. 1828, pl. 456, is Cape Seas.]

Range:—New Zealand Seas: Campbell Island (breeding); ? Sisters, Chatham Islands.

Thalassarche bulleri (Rothschild). Snares Island Mollymawk.

Diomedea bulleri Rothschild, Bull. Brit. Orn. Club, vol. i. 1893, p. lviii : New Zealand.

Synonym :—

Diomedea bulleri Buller, Suppl. vol. i. p. 149.

Range :—Snares Island (breeding).

Genus THALASSOGERON.

Thalassogeron Baird, Brewer, and Ridgway, Mem. Mus. Comp. Zool., Harvard, vol. xiii. 1884, p. 345.

Type (by original designation) : *T. chrysostoma culminatus* (Gould).

Thalassogeron chrysostoma mathewsi (Rothschild). Campbell Island Flat-billed Mollymawk.

Diomedea culminata mathewsi Rothschild, Bull. Brit. Orn. Club, vol. xxxix. 1912, p. 70 : Campbell Island.

Synonym :—

Diomedea culminata Buller, Suppl. vol. i. p. 154. [The type-locality of *Diomedea chrysostoma* Forster, Mém. Math. et Phys. Acad. Roy. Sci. Paris, vol. x. 1785, p. 571, pl. xiv., is Cape Seas ; and *Diomedea culminata* Gould, Proc. Zool. Soc. 1843, p. 107, is the name used for the Australian form of the species.]

Range :—New Zealand Seas, Campbell Island (breeding).

Thalassogeron chlororhynchos bassi (Mathews). East Australian Yellow-nosed Mollymawk.

Diomedea bassi Mathews, Nov. Zool. vol. xviii. 1912, p. 206 : East Australia.

Synonym :—

Diomedea chlororhyncha Buller, Suppl. vol. i. p. 154. [The type-locality of *Diomedea chlororhynchos* Gmelin, Syst. Nat. 1789, p. 568, is Cape Seas.]

Range :—New Zealand Seas.

Thalassogeron cautus salvini Rothschild. Bounty Island Mollymawk.

Thalassogeron salvini Rothschild, Bull. Brit. Orn. Club, vol. i. 1893, p. lviii : New Zealand.

Synonyms :—

Diomedea salvini Buller, Suppl. vol. i. p. 150.

Diomedea cauta id. ib. p. 153. [The type-locality of *Diomedea cauta* Gould, Proc. Zool. Soc. for 1840, 1841, p. 177, is Bass' Straits.]

Range :—New Zealand Seas, Bounty Island (breeding).

Note :—There is little doubt that Buller was not well acquainted with the distinguishing features of the species and subspecies of Mollymawks. In this instance, he accepts both *Diomedea salvini* and *D. cauta* as occurring on the Snares, and the matter on p. 153 clearly shows his views on this point were quite obscure. The fact is that *D. salvini* is the New Zealand breeding-race of *D. cauta*, and consequently both cannot be found together at the Snares.

Genus PHŒBETRIA.

Phœbetria Reichenbach, Nat. Syst. Vögel, 1852, p. v.

Type (by original designation) : *P. palpebrata* (Forster).

Phœbetria palpebrata huttoni Mathews. New Zealand Light-mantled Sooty Albatros.

Phœbetria palpebrata huttoni Mathews, Birds Austr. vol. ii. 1912, p. 297 : New Zealand Seas.

Synonym :—

Phœbetria fuliginosa Buller, Suppl. vol. i. p. 155 (part.). [The type-locality of *Diomedea palpebrata* Forster, Mém. Math. et Phys. Acad. Roy. Sci. Paris, vol. x. 1785, p. 571, is lat. 64° S., long. 38° E. ; and *Diomedea fuliginosa* Gmelin, Syst. Nat. 1789, p. 568, is based on Forster's bird.]

Range :—New Zealand Seas : Antipodes Island, Auckland Island, Campbell Islands, and Macquarie Island (breeding).

Phœbetria fusca campbelli Mathews. Australian Sooty Albatros.

Phœbetria fusca campbelli Mathews, Birds Austr. vol. ii. 1912, p. 304 : Australian Seas.

Synonym :—

Phœbetria fuliginosa Buller, Suppl. vol. i. p. 155 (part.). [The type-locality of *Diomedea fusca* Hilsenberg, Froriep's Notizen, vol. iii. 1822, no. 5 (49), p. 74, is Mozambique Channel.]

Range :—New Zealand Seas.

Order LARIFORMES.

Family LARIDÆ.

[Genus HYDROCHELIDON.

Hydrochelidon Boie, Isis, 1822, p. 563.

Type (by subsequent designation) : *H. nigra* (Linné).

Hydrochelidon leucoptera grisea (Horsfield). Eastern White-winged Black Tern.

Sterna grisea Horsfield, Trans. Linn. Soc. Lond. vol. xiii. 1821, p. 199 : Java.

Synonym :—

Hydrochelidon leucoptera Buller, Suppl. vol. i. p. 157. [The type-locality of *Sterna leucoptera* Temminck, Manuel d'Ornith. 1815, p. 483, is Shores of the Mediterranean.]

Range :—New Zealand (accidental visitor, one occurrence: Waihopai River, Dec. 12th, 1868, *in full breeding-plumage*): extralimital.

Note :—Though no doubt has hitherto been cast upon this record, we are agreed that it seems quite inadmissible (*cf.* Mathews, Birds Austr. vol. ii. p. 314, 1912).]

Genus HYDROPROGNE.

Hydroprogne Kaup, Skizz. Entwick.-Gesch. Nat. Syst. 1829, p. 91.

Type (by subs. design.) : *H. tschegrava* (Lepechin).

Hydroprogne tschegrava oliveri, subsp. n. New Zealand Caspian Tern.

Synonym :—

Heroprogne (sic) *caspia* Buller, Suppl. vol. i. p. 157. [The type-locality of *Sterna tschegrava* Lepechin, Nov. Comm. Acad. Petrop. vol. xiv. pt. 1, 1770, p. 500, is Shores of the Caspian Sea, and *S. caspia* was described by Pallas from the same locality in the same journal 82 pages subsequently.]

Range :—New Zealand (breeding).

Note :—The New Zealand birds agree with *H. t. strenua* Gould (Proc. Zool. Soc. 1846, p. 21), the Australian race, in having longer bills than the typical form, but are smaller than that subspecies and have also shorter wings. The bill averages 71 mm. against 66 mm. in the typical form and 75 mm. in *H. t. strenua*; the wing averages 400 mm. as compared with 420 mm. in *H. t. strenua.*

Type in the British Museum.

Genus THALASSEUS.

Thalasseus Boie, Isis, 1822, p. 563.

Type (by subsequent designation): *T. sandvicensis* (Latham).

Thalasseus bergii rectirostris (Peale). Fijian Crested Tern.

Sterna rectirostris Peale, U.S. Expl. Exped., Zool. 1848, p. 281: Fiji Islands.

Synonym:—

Sterna bergii Oliver, Trans. New Zeal. Inst. vol. xliv. 1912, p. 215. [The type-locality of *Sterna bergii* Lichtenstein, Verzeichn. Doubl. Zool. Mus. Berl. 1823, p. 80, is Cape of Good Hope.]

Range:—Kermadec Islands (one occurrence recorded by Oliver as above would be referable to the Fijian form).

Genus STERNA.

Sterna Linné, Syst. Nat. 10th ed. 1758, p. 137.

Type (by tautonymy): *S. hirundo* Linné.

Sterna albistriata albistriata (Gray). Black-fronted Tern.

Hydrochelidon albistriata Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 19: New Zealand.

Synonyms:—

Sterna antarctica (not Lesson) Wagler, Isis, 1831, p. 1223: New Zealand.

Sterna albistriata Buller, Suppl. vol. i. p. 158.

Range:—New Zealand (breeding).

Note:—In the 'Subantarctic Islands of New Zealand,' vol. i. 1909, p. 556, Waite noted discrepancies in the dates of publication of the 'Erebus' and 'Terror' birds. Mr. Sherborn informs us that pages 1 to 8 were published in 1844, and pages 9 to 20 in 1845.

Sterna striata striata Gmelin. New Zealand White-fronted Tern.

Sterna striata Gmelin, Syst. Nat. 1789, p. 609 : New Zealand.

Synonyms :—

Sterna frontalis Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 19 : New Zealand.
Sterna albifrons (not Pallas) Peale, U.S. Expl. Exped., Zool. 1848, p. 279 : Bay of Islands, North Island
Sterna frontalis Buller, Suppl. vol. i. p. 158.

Range :—New Zealand (breeding).

Sterna striata bethunei Buller. Auckland Islands White-fronted Tern.

Sterna bethunei Buller, Trans. New Zeal. Inst. vol. xxviii. 1896, p. 349 : Auckland Islands.

Synonym :—

Sterna bethunei Buller, Suppl. vol. i. p. 159.

Range :—Auckland Islands (breeding) ; ? Chatham Islands (breeding).

Sterna vittata bollonsi, subsp. n. New Zealand Subantarctic Tern.

Synonyms :—

Sterna bethunei Buller, Trans. New Zeal. Inst. 1895, vol. xxviii. p. 348, 1896, nom. nudum.
Sterna vittata Buller, Suppl. vol. i. p. 158. [The type-locality of *Sterna vittata* Gmelin, Syst. Nat. 1789, p. 609, is Kerguelen Island.]

Range :—Subantarctic Islands of New Zealand (breeding).

Note :—The New Zealand specimens of this species differ from typical birds in their lighter coloration both above and below and probably also in their shorter wing-measurement : wing under 260 mm., wing in typical form over 275 mm.

Type in the British Museum.

Genus STERNULA.

Sternula Boie, Isis, 1822, p. 563.

Type (by subsequent designation) : *S. albifrons* (Vroeg).

Sternula nereis davisæ, subsp. n. New Zealand Fairy Tern.

Synonyms :—

? *Sterna alba* (not Sparrman) Potts, Trans. New Zeal. Inst. vol. iii. 1871, p. 106 : South Island.

Sterna nereis Buller, Suppl. vol. i. p. 161. [The type-locality of *Sternula nereis* Gould, Proc. Zool. Soc. for 1842, 1843, p. 140, is Bass' Strait.]

Range :—New Zealand (breeding).

Note :—The New Zealand specimens are distinctly separated from the Australian forms by their larger size and darker coloration, the black lores being also more extensive. Measurements : *S. n. davisæ* : culmen 31–35 ; wing average 200 mm. : typical birds have the culmen 33 and the wing under 185 mm.

Type in the British Museum.

Genus ONYCHOPRION.

Onychoprion Wagler, Isis, 1832, p. 277.

Type (by monotypy) : *O. fuscatus* (Linné).

Onychoprion fuscatus serratus (Wagler). Australian Sooty Tern.

Sterna serrata Wagler, Natürl. Syst. Amphib. 1830, p. 89, note : New Caledonia.

Synonyms :—

Sterna melanura Gould, Synops. Birds Austr. pt. iv. App., 1838, p. 7 : New South Wales.

Sterna gouldi Reichenbach, Aves Natat. Longip. xxii. 1848, f. 829 : West Australia.

Sterna fuliginosa Buller, Suppl. vol. i. p. 159. [The type-locality of *Sterna fuscata* Linné, Syst. Nat. 12th ed. 1766, p. 228, is S. Domingo, West Indies ; and *Sterna fuliginosa* Gmelin, Syst. Nat. 1789, p. 605, is an absolute synonym. Linné's description is of a young bird, but is clearly applicable to this bird only.]

Range :—Kermadec Islands (breeding) ; extralimital.

Genus PROCELSTERNA.

Procelsterna Lafresnaye, Mag. de Zool. 1842, pl. 29.
Type (by monotypy): *P. cerulea* (Bennett).

Procelsterna cerulea cinerea (Gould). Little Grey Noddy.

Anous cinereus Gould, Proc. Zool. Soc. 1845, p. 104: north-eastern coast of Australia.

Synonyms:—

Procelsterna albivitta Bonaparte, Comptes Rendus Sci. Paris, vol. xlii. 1856, p. 773: new name for *A. cinereus* Gould.

Procelsterna cinerea Buller, Suppl. vol. i. p. 161. [The type-locality of *Sterna cerulea* Bennett, Narr. Whaling Voyage, vol. ii. 1840, p. 248, is Christmas Island.]

Range:—Kermadec Islands (breeding); New Zealand [accidental visitor: one occurrence, Cape Maria van Diemen, 1882. Grant ('Ibis,' 1905, p. 561) recorded three specimens from Dusky Sound, South Island. One of us went very closely into this matter, and it was proved that an interchange of labels had taken place and that the birds had been procured on Curtis Island, Kermadec Group].

Note:—Buller, in the Suppl. vol. i. p. 162, included *Anous stolidus* as a Kermadec breeder. One of us has already pointed out that this was an erroneous quotation (Iredale, 'Emu,' vol. x. 1910, p. 10).

Genus MEGALOPTERUS.

Megalopterus Boie, Isis, 1826, p. 980.
Type (by monotypy): *M. tenuirostris* (Temminck).

Megalopterus minutus minutus (Boie). White-capped Noddy.

Anous minutus Boie, Isis, 1844, p. 188: north-eastern Australia.

Synonyms:—

Anous leucocapillus Gould, Proc. Zool. Soc. 1845, p. 103: North-eastern Australia.

Anous atrofuscus Stone, Proc. Acad. Nat. Sci. Philad. 1894, p. 117: New Guinea.

Micranous leucocapillus Buller, Suppl. vol. i. p. 163.

Range:—Kermadec Islands (breeding).

Genus GYGIS.

Gygis Wagler, Isis, 1832, p. 1223.

Type (by monotypy): *G. alba* (Sparrman).

Gygis alba royana Mathews. White Tern.

Gygis alba royana Mathews, Birds Austr. vol. ii. 1912, p. 433: Kermadec Islands.

Synonym:—

Gygis alba Buller, Suppl. vol. i. p. 163. [The type-locality of *Sterna alba* Sparrman, Mus. Carlson. 1786, fasc. i. no. 11, is Ascension Island, Atlantic Ocean.]

Range:—Kermadec Islands (breeding).

Genus BRUCHIGAVIA.

Bruchigavia Bonaparte, Consp. Gen. Av. vol. ii. 1857, p. 228.

Type (by monotypy): *B. novæhollandiæ* (Stephens).

Bruchigavia melanorhyncha Buller. Black-billed Gull.

Bruchigavia melanorhyncha Buller, Ibis, 1869, p. 43: South Island.

Synonym:—

Larus bulleri Hutton, Cat. Birds New Zeal. 1871, p. 41: South Island; ? Potts, Ibis, 1872, p. 38: South Island; Buller, Suppl. vol. i. p. 164.

Range:—South Island (breeding).

Note:—There appears to be much confusion in the early literature concerning this very distinct species. This has not been cleared up in the 'Supplement,' as mention is made of another bird with a brown bill (distinct from *Larus scopulinus*) and red legs. Such problems cannot be elucidated without further collection of specimens.

Bruchigavia novæhollandiæ scopulinus (Forster). New Zealand Red-billed Gull.

Larus scopulinus Forster, Descr. Anim. ed. Licht. 1844, p. 106: Dusky Sound, South Island.

Synonyms:—

Larus novæhollandiæ Buller, Suppl. vol. i. p. 165.

Larus scopulinus Buller, Suppl. vol. i. p. 166. (The type-locality of *Larus novæhollandiæ* Stephens in Shaw's Gen. Zool. vol. xiii. pt. 1, 1826, p. 196, is New South Wales; and *Larus scopulinus* Gray in Dieffenbach's Travels in New Zeal. vol. ii. 1843, p. 200, is a nomen nudum.)

Range:—New Zealand (breeding), Subantarctic Islands (breeding).

Note:—It would be quite unwise to accept the Australian *B. n. novæhollandiæ* as a visitor to New Zealand without authentic specimens having been carefully examined by competent critics. It is obvious from Buller's writings that he was not familiar with the Australian forms, and the exposition by one of us (Mathews, Birds Austr. vol. ii. pp. 191–2) has made it clear that easily differentiated forms occur round the Australian coast.

Genus LARUS.

Larus Linné, Syst. Nat. 10th ed. 1758, p. 136.

Type (by subsequent designation): *L. canus* Linné.

Larus dominicanus antipodus (Bruch). New Zealand Black-backed Gull.

Dominicanus antipodus Bruch, Journ. für Orn. 1853, p. 100: New Zealand.

Synonyms:—

Larus melanoleucus Boie, Isis, 1844, p. 196: nomen nudum.

Larus dominicanus Buller, Suppl. vol. i. p. 168. (The type-locality of *Larus dominicanus* Lichtenstein, Verzeichn. Doubl. Zool. Mus. Berl. 1823, p. 82, is South America.)

Range:—New Zealand (breeding), Subantarctic Islands (breeding).

Genus CATHARACTA.

Catharacta Brünnich, Orn. Boreal. 1764, p. 32.

Type (by subsequent designation): *C. skua* Brünnich.

Catharacta lönnbergi lönnbergi Mathews. New Zealand Great Skua.

Catharacta antarctica lönnbergi Mathews, Nov. Zool. vol. xviii. 1912, p. 212: New Zealand Seas.

Synonyms :—

Megalestris antarctica Buller, Suppl. vol. i. p. 169. [The type-locality of *Lestris antarcticus* Lesson, Traité d'Orn. 1831, p. 616, is Falkland Islands, and this is better considered as a subspecies of *C. skua* Brünnich (*cf.* Mathews, Birds Austr. vol. ii. 1913, p. 493).]

Range :—New Zealand Seas : Chatham Islands and Subantarctic Islands of New Zealand (breeding).

Catharacta maccormicki maccormicki (Saunders). South Polar Skua.

Stercorarius maccormicki Saunders, Bull. Brit. Orn. Club, vol. iii. 1893, p. xii : Victoria Land.

Synonym :—

Megalestris maccormicki Buller, Suppl. vol. i. p. 170.

Range :—New Zealand (one occurrence, Stewart Island, 1895) ; Antarctic, Victoria Land (breeding).

Genus STERCORARIUS.

Stercorarius Schaeffer, Mus. Ornith. 1789, p. 62.
Type (by monotypy) : *S. parasiticus* (Linné).

Stercorarius parasiticus (Linné). Arctic Skua.

Larus parasiticus Linné, Syst. Nat. 10th ed. 1758, p. 136 : coasts of Sweden.

Synonym :—

Stercorarius crepidatus Buller, Suppl. vol. i. p. 171. [It has been recently shown that the bird commonly known as *S. crepidatus* (Gmelin, Syst. Nat. 1789, p. 602) is the true *L. parasiticus* Linné.]

Range :—New Zealand Seas (accidental visitor) ; extra-limital.

Note :—So much confusion exists through the uncertain naming by European ornithologists of birds killed in New Zealand that it is quite impossible to decide from the literature whether all the references belong to one species. We are inclined to believe that both the Arctic and Long-tailed Skuas have occurred in New Zealand waters. It should be noted that in Buller's first edition of the 'Birds of New

Zealand,' 1873, p. 269, the first specimen was referred to *S. parasiticus* auct., non Linné = *S. longicaudus* Vieillot (Nouv. Dict. d'Hist. Nat. vol. xxxii. 1819, p. 157). Re-examination of the specimens preserved in the Dominion are necessary to decide this matter.

Order CHARADRIIFORMES.

Family MORINELLIDÆ.

Genus MORINELLA.

Morinella Meyer & Wolf, Taschenb. Vögel, 1810, p. 382, note.

Type (by monotypy) : *M. interpres* (Linné).

Morinella interpres oahuensis (Bloxham). Eastern Turnstone.

Tringa oahuensis Bloxham, Voy. 'Blonde' Sandwich Is., 1826, p. 251 : Sandwich Islands.

Synonym :—

Arenaria interpres Buller, Suppl. vol. i. p. 171. [The type-locality of *Tringa interpres* Linné, Syst. Nat. 10th ed. 1758, p. 148, is Sweden.]

Range :—New Zealand (irregular visitor) ; extralimital.

Note :—In the order Charadriiformes we do not intend to give the full synonymy of those birds which, breeding in the Arctic and Subarctic zones of the Holarctic Region, range southwards and occur as winter visitors or irregular wanderers in New Zealand during the summer months from November to April).

Family HÆMATOPODIDÆ.

Genus HÆMATOPUS.

Hæmatopus Linné, Syst. Nat. 10th ed. 1758, p. 152.

Type (by monotypy) : *H. ostralegus* Linné.

Hæmatopus ostralegus finschi Martens. New Zealand Oyster-Catcher.

Hæmatopus finschi Martens, Orn. Monatsb. vol. v. 1897, p. 190: South Island.

Synonyms :—

Hæmatopus reischeki Rothschild, Bull. Brit. Orn. Club, vol. x. 1899, p. iv: Kaiparu, North Island.

Hæmatopus longirostris Buller, Suppl. vol. i. p. 172. [The type-locality of *H. ostralegus* Linné, Syst. Nat. 10th ed. 1758, p. 152, is Sweden (Oeland).]

Range :—Both Islands (breeding).

Hæmatopus niger unicolor Forster. New Zealand Black Oyster-Catcher.

Hæmatopus unicolor Forster, Descr. Anim. ed. Licht. 1844, p. 112: New Zealand.

Synonym :—

Hæmatopus unicolor Buller, Suppl. vol. i. p. 172. [The type-locality of *H. niger* Temminck, Manuel d'Ornith. vol. ii. 1820, p. 533, is South Africa and *H. unicolor* Wagler, Isis, 1832, p. 1230, is a nomen nudum.]

Range :—Both Islands (breeding).

Family CHARADRIIDÆ.

Genus LOBIBYX.

Lobibyx Heine, Nomencl. Mus. Heine. 1890, p. 334. Type (by orig. design.): *L. novæhollandiæ* (Stephens).

Lobibyx novæhollandiæ (Stephens). Spur-winged Plover.

Vanellus novæhollandiæ Stephens in Shaw's Gen. Zool. vol. xi. 1819, p. 516: New South Wales.

Synonyms :—

Tringa lobata (not Linné) Latham, Index Ornith. Suppl. 1801, p. lxv: New South Wales.

Charadrius gallinaceus Wagler, Syst. Avium, *Charadrius*, 1827, sp. 50: New South Wales.

Lobivanellus lobatus Buller, Suppl. vol. i. p. 173.

Range :—New Zealand (one occurrence, near Wanganui, North Island, August 1886); East Australia (breeding).

Genus PLUVIALIS.

Pluvialis Schaeffer, Museum Ornith. 1789, p. 48.

Type (by tautonymy) : *P. apricarius* (Linné).

luvialis dominicus fulvus (Gmelin). Eastern Golden Plover.

Charadrius fulvus Gmelin, Syst. Nat. 1789, p. 687 : Tahiti.

Synonym :—

Charadrius dominicus Buller, Suppl. vol. i. p. 174. [The type-locality of *Charadrius dominicus* P. L. S. Müller, Natursyst. Suppl. 1776, p. 116, is Santo Domingo, West Indies.]

Range :—New Zealand (irregular visitor) ; extralimital.

Genus PLUVIORHYNCHUS.

Pluviorhynchus Bonaparte, Comptes Rendus Sci. Paris, vol. xliii. 1856, p. 417.

Type (by subs. design.) : *P. obscurus* (Gmelin).

Pluviorhynchus obscurus (Gmelin). New Zealand Dottrel.

Charadrius obscurus Gmelin, Syst. Nat. 1789, p. 686 : Dusky Sound, South Island.

Synonyms :—

Charadrius glareola Forster, Descr. Anim. ed. Licht. 1844, p. 109 : same locality.

Ochthodromus obscurus Buller, Suppl. vol. i. p. 175.

Range :—Both Islands (breeding) ; Stewart Island (breeding).

Genus CIRREPIDESMUS.

Cirrepidesmus Bonaparte, Comptes Rendus Sci. Paris, vol. xliii. 1856, p. 417.

Type (by tautonymy) : *C. inconspicuus* (Lichtenstein).

Cirrepidesmus bicinctus (Jardine & Selby). Double-banded Dottrel.

Charadrius bicinctus Jardine & Selby, Illus. Ornith. vol. i. 1827, pl. 228 : New South Wales.

Synonym :—

Ochthodromus bicinctus Buller, Suppl. vol. i. p. 175.

Range :—Both Islands (breeding) ; Eastern Australia.

Genus EUPODA.

Eupoda Brandt in Tchihatcheff's Voy. Sci. Altai Orient. 1845, p. 444.

Type (by monotypy): *E. asiatica* (Pallas).

Eupoda vereda (Gould). Oriental Dottrel.

Charadrius veredus Gould, Proc. Zool. Soc. 1848, p. 38: north-western Australia.

Range:—Kermadec Islands (one occurrence, April 24 1908); extralimital.

Genus LEUCOPOLIUS.

Leucopolius Bonaparte, Comptes Rendus Sci. Paris, vol. xliii. 1856, p. 417.

Type (by tautonymy): *L. marginatus* (Vieillot).

Leucopolius ruficapillus ruficapillus (Temminck). Red-capped Dottrel.

Charadrius ruficapillus Temminck & Laugier, Planch. Color. d'Ois. 8e livr. 1821, pl. 47. fig. 2: New South Wales.

Synonyms:—

Charadrius marginatus Lesson, Manuel d'Orn. vol. ii. 1828, p. 318: Victoria.

Ægialitis ? canus Gould, Synops. Birds Austr. pt. iv. App. 1838, p. 6: New South Wales.

Ægialitis ruficapilla Buller, Suppl. vol. i. p. 175.

Range:—New Zealand (accidental visitor: one occurrence, Waikanae, North Island, Dec. 1878); extralimital.

Genus THINORNIS.

Thinornis Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 11.

Type (by monotypy): *T. novæseelandiæ* (Gmelin).

Thinornis novæseelandiæ (Gmelin). New Zealand Shore-Plover.

Charadrius novæseelandiæ Gmelin, Syst. Nat. 1789, p. 684: Queen Charlotte's Sound, South Island.

Synonyms :—

Charadrius dudoroa Wagler, Syst. Avium, *Charadrius* sp. 14, 1827 : same locality.

Charadrius torquatula Forster, Descr. Anim. ed. Licht. 1844, p. 108 : same locality.

Thinornis rossii Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 12, pl. 11 : Auckland Islands (? errore).

Thinornis novæzealandiæ Buller, Suppl. vol. i. p. 176.

Thinornis rossi id. ib.

Range :—New Zealand (breeding); Chatham Islands (breeding); ? Auckland Islands.

Note :—We have examined the type of *Thinornis rossii* Gray, and consider it to be immature, as Buller first concluded. It has never been found again on the Auckland Islands, and we would suggest that the specimen was not procured there, but at Auckland in the North Island. It bears no original label, and McCormick states that "Only one Plover was observed and no specimen obtained at the Auckland Islands."

Genus ANARHYNCHUS.

Anarhynchus Quoy & Gaimard, Voy. de l'Astrol., Zool. vol. i. 1830, p. 252.

Type (by monotypy) : *A. frontalis* Quoy & Gaimard.

Anarhynchus frontalis Quoy & Gaimard. **Wry-billed Plover.**

Anarhynchus frontalis Quoy & Gaimard, Voy. de l'Astrol., Zool. vol. i. 1830, p. 252 : Baie Chouraki, North Island.

Synonyms :—

Anarhynchus albifrons Schlegel, De Dier-Kunde, vol. i. 1857, p. 435. (Improvement for "*frontalis*" Q. & G.)

Anarhynchus frontalis Buller, Suppl. vol. i. p. 177.

Range :—Both Islands (breeding).

Family RECURVIROSTRIDÆ.

Genus HYPSIBATES.

Hypsibates Nitzsch in Ersch u. Grüber's Encyclop. vol. xvi. 1827, p. 150.

Type (by monotypy) : *H. himantopus* (Linné).

Hypsibates leucocephalus albus (Ellman). New Zealand Stilt.

Himantopus albus Ellman, Zoologist, 1861, p. 7470: New Zealand.

Synonyms:—

? *Himantopus picatus* Ellman, Zoologist, 1861, p. 7470: New Zealand.
Himantopus albicollis (nec Vieillot), Buller, Trans. New Zealand Inst. vol. vii. 1875, p. 224: North Island.
Himantopus picatus Buller, Suppl. vol. i. p. 177.
Himantopus leucocephalus id. ib. p. 178.
Himantopus albicollis id. ib. p. 179.

Range:—New Zealand (breeding).

Note:—There can be no doubt that the New Zealand Stilt is only subspecifically distinct from the Australian *H. leucocephalus* Gould (Synops. Birds Austr. 1837, pt. ii. pl. 34: New South Wales), from which it was first differentiated by Sharpe in the Cat. Birds Brit. Mus. vol. xxiv. 1896, p. 319. The reference by Buller of a specimen to *H. leucocephalus* (as above) is due to the fact that some examples approach very closely to the typical form. Buller's *H. albicollis* is simply founded on a plumage change.

The correct nomination of the form has given considerable trouble, as this is the only case where the names introduced by Ellman have to be seriously treated. When Sharpe separated the New Zealand form he used Ellman's *H. picatus*, but we are forced to consider that indeterminable. We would also have been pleased to have dismissed Ellman's *H. albus* under the same plea, but feel compelled to admit its validity. In order to place the matter fairly before the critic, we append Ellman's accounts:—

"Pied Stilt (Torea-iti) *Himantopus picatus*: of various proportions of black and white.

White Stilt (Tore-aiti, Tutumata) *Himantopus albus*. This species is scarce, smaller than the preceding, and is not subject to varieties of plumage. The head, neck, back, and belly are pure white. The wings are of indigo-black. Both sexes are similar in plumage."

The former might be applicable to a seasonal change of the next species, but the second description is comparatively complete.

It has been suggested that as the New Zealand Stilt undertakes seasonal movements it migrates to Australia. This is easily disproved by the fact that no specimen has been procured in Australia giving the subspecific characters of the New Zealand form.

Hypsibates novæzealandiæ (Gould). Black Stilt.

Himantopus novæzealandiæ Gould, Birds Austr. 1841 (before Sept.), pl. 25 : Port Nicholson, North Island.

Synonyms :—

Himantopus melas Hombron & Jacquinot, Ann. Sci. Nat. Paris, 2nd ser. vol. xvi. 1841 (after Nov.), p. 320 : Otago, South Island.

Himantopus spicatus Potts, Trans. New Zealand Inst. vol. v. 1873, p. 177 : Selwyn, South Island.

Himantopus melas Buller, Suppl. vol. i. p. 179.

Range :—New Zealand (breeding).

Note :—The exact status of this form needs investigation. It seems to be a fixed melanistic form, which breeds true ; but the accounts are very confused and specimens are required to confirm the statements made.

Genus RECURVIROSTRA.

Recurvirostra Linné, Syst. Nat. 10th ed. 1758, p. 151.

Type (by monotypy) : *R. avocetta* Linné.

Recurvirostra novæhollandiæ novæhollandiæ Vieillot. Eastern Red-necked Avocet.

Recurvirostra novæhollandiæ Vieillot, Nouv. Dict. d'Hist. Nat. vol. iii. 1816, p. 103 : Victoria.

Synonyms :—

Recurvirostra rubricollis Temminck, Manuel d'Orn. vol. ii. 1823, p. 592 : Victoria.

Recurvirostra novæhollandiæ Buller, Suppl. vol. i. p. 180.

Range :—New Zealand (accidental, few occurrences) : extralimital.

Family SCOLOPACIDÆ.

Genus NUMENIUS.

Numenius Brünnich, Zool. Fund. 1771, p. 76.

Type (by subsequent designation): *N. arquata* (Linné).

Numenius cyanopus Vieillot. Australian Curlew.

Numenius cyanopus Vieillot, Nouv. Dict. d'Hist. Nat. vol. viii. 1817, p. 306: New South Wales.

Synonyms:—

Numenius australasianus Gould, Synops. Birds Austr. pt. iv. App. 1838, p. 6: New South Wales.

Numenius rufescens Gould, Proc. Zool. Soc. 1862, p. 286: Formosa.

Numenius cyanopus Buller, Suppl. vol. i. p. 180.

Range:—New Zealand (accidental, few occurrences); extralimital.

Numenius phæopus variegatus (Scopoli) Australian Whimbrel.

Tantalus variegatus Scopoli, Del Flor. Faun. Insub. fasc. ii. 1786, p. 92: Luzon.

Synonyms:—

Numenius uropygialis Gould, Proc. Zool. Soc. for 1840, 1841, p. 175: south coast of Australia.

Numenius variegatus Buller, Suppl. vol. i. p. 181. [The type-locality of *Scolopax phæopus* Linné, Syst. Nat. 10th ed. 1758, p. 146, is Europe (Sweden).]

Range:—New Zealand (accidental: two occurrences, Wairau and Westport, Dec. 1893); Kermadec Islands (one, Sept. 1908); extralimital.

Genus MESOSCOLOPAX.

Mesoscolopax Sharpe, Cat. Birds Brit. Mus. vol. xxiv. 1896, pp. 338, 371.

Type (by monotypy): *M. minutus* (Gould).

Mesoscolopax minutus (Gould). Little Whimbrel.

Numenius minutus Gould, Proc. Zool. Soc. 1840, p. 176, 1841: New South Wales.

Synonym :—

Mesoscolopax minutus Buller, Suppl. vol. i. p. 181.

Range :—New Zealand (accidental : one occurrence, Lake Ellesmere, June 1900) ; extralimital.

Genus LIMOSA.

Limosa Schaeffer, Museum Ornith. 1789, p. 52.
Type (by tautonymy) : *L. limosa* (Linné).

Limosa lapponica baueri Naumann. Eastern Barred-rumped Godwit.

Limosa baueri Naumann, Vögel Deutschl. vol. viii. 1836, p. 429 : Victoria.

Synonyms :—

Limosa lapponica, var. *novæzealandiæ* Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 13 : New Zealand.
Limosa uropygialis Gould, Proc. Zool. Soc. 1848, p. 38 : Victoria.
Limosa novæzealandiæ Buller, Suppl. vol. i. p. 181. [The type-locality of *Scolopax lapponica* Linné, Syst. Nat. 10th ed. 1758, p. 147, is Lapland.]

Range :—New Zealand (regular and numerous visitor) ; extralimital.

Limosa limosa hæmastica (Linné). Hudsonian Godwit.

Scolopax hæmastica Linné, Syst. Nat. 10th ed. 1758, p. 147 : Hudson Bay, North America.

Synonym :—

Limosa hudsonica Buller, Suppl. vol. i. p, 185. [The type-locality of *Scolopax limosa* Linné, Syst. Nat. 10th ed. 1758, p. 147, is Europe (Sweden).]

Range :—New Zealand (accidental : one occurrence, Lake Ellesmere, Canterbury, 4 March 1902) ; extralimital.

Genus HETEROSCELUS.

Heteroscelus Baird, Rep. Expl. Surv. Railr. Pac. Ocean, vol. ix. 1858, p. 734.
Type (by original designation) : *H. brevipes* (Vieillot).

Heteroscelus incanus (Gmelin). Grey Sandpiper.

Scolopax incana Gmelin, Syst. Nat. 1789, p. 658 : Eimeo and Palmerston Island, Pacific Ocean.

Synonym :—

Heteractitis incanus Buller, Suppl. vol. i. p. 186.

Range :—New Zealand (accidental visitor : pair, Portland Island, autumn 1883) ; extralimital.

Genus GLOTTIS.

Glottis Koch, Syst. baier. Zool. 1816, pp. xlii, 294.

Type (by monotypy) : *G. nebularius* (Gunner).

Glottis nebularius (Gunner). Greenshank.

Scolopax nebularia Gunner in Leem's Lapp. Beskr. 1767, p. 215, note : Europe (Norway).

Synonym :—

Glottis nebularius Buller, Suppl. vol. i. p. 186.

Range :—New Zealand (accidental visitor : one occurrence, Otago, 1874) ; extralimital.

Genus EROLIA.

Erolia Vieillot, Analyse nouv. Ornith, 1816, p. 55.

Type (by monotypy) : *E. ferruginea* (Brünnich).

Erolia ferruginea (Brünnich). Curlew-Sandpiper.

Tringa ferruginea Brünnich, Ornith. Boreal. 1764, p. 53 : Iceland.

Synonym :—

Ancylochilus subarquatus Buller, Suppl. vol. i. p. 187.

Range :—New Zealand (accidental visitor, few occurrences : Lake Ellesmere, Canterbury, Feb. 3rd, 1902, April 5th, 1903, two ; Lake Te Anau, Otago, March 1903) ; extralimital.

Genus PISOBIA.

Pisobia Billberg, Synopsis Faunæ Scand. vol. i. 1828, pt. ii. p. 136.

Type (by subsequent designation) : *P. minuta* (Leisler).

Pisobia minuta ruficollis Pallas. Red-necked Sandpiper.

Tringa ruficollis Pallas, Reise Russ. Reichs. vol. iii. 1776, p. 700 : Dauria (*i. e.* Amurland).

Synonym :—

Limonites ruficollis Buller, Suppl. vol. i. p. 186. [The type-locality of *Tringa minuta* Leisler, Nachtr. Bechst. Naturg. Deutschl. 1812, p. 74, is Germany.]

Range :—? New Zealand ; extralimital.

Note :—Buller included this upon Hutton's authority, which is thus quoted : "Mr. E. Stead brought me a specimen on July 22nd (1902) which he had shot near Lake Ellesmere. It was a female, well on in the breeding-plumage, and with well-developed eggs. It would, I think, have laid the eggs in about a month after being shot. Another specimen in non-breeding plumage was, I believe, sent to the British Museum by Lord Ranfurly early in the year." The latter specimen was named by Grant ('Ibis,' 1905, p. 564) as *Tringa subarquata* (Güldenst.) [= *Erolia ferruginea* (Brünnich)], who noted that it had been first identified by Captain Hutton as a Pectoral Sandpiper (*Heteropygia acuminata*), and subsequently referred by him to the Red-throated Stint (*Limonites ruficollis*). In view of such diverse attempts at nomination, this record requires re-investigation.

Genus HETEROPYGIA.

Heteropygia Coues, Proc. Acad. Nat. Sci. Philad. 1861, p. 190.

Type (by original designation) : *H. fuscicollis* (Vieillot).

Heteropygia maculata acuminata (Horsfield). Sharp-tailed Sandpiper.

Totanus acuminatus Horsfield, Trans. Linn. Soc. vol. xiii. 1821, p. 192 : Java.

Synonym :—

Heteropygia acuminata Buller, Suppl. vol. i. p. 187. [The type-locality of *Tringa maculata* Vieillot, Nouv. Dict. d'Hist. Nat. vol. xxxiv. 1819, p. 465, is United States.]

Range :—New Zealand (irregular visitor) ; extralimital.

Genus CANUTUS.

Canutus Brehm, Vögel Deutschl. 1831, p. 653.

Type (by tautonymy) : *C. canutus* (Linné).

Canutus canutus (Linné). Knot.

Tringa canutus Linné, Syst. Nat. 10th ed. 1758, p. 150 : Europe (Sweden).

Synonym :—

Tringa canutus Buller, Suppl. vol. i. p. 187.

Range :—New Zealand (accidental visitor) ; extralimital.

Note :—The foregoing list of Charadriidæ would be very considerably lengthened were specimens collected ; it is advisable to submit such captures to competent ornithologists, as errors of identification are quite easily made, as is noted under *Pisobia minuta ruficollis* (Pallas).

Genus CŒNOCORYPHA.

Cœnocorypha Gray, Cat. Gen. Subgen. Birds, 1855, p. 119.

Type (by original designation) : *C. aucklandica* (Gray).

Cœnocorypha aucklandica aucklandica (Gray). Auckland Islands' Snipe.

Gallinago aucklandica Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 13 : Auckland Islands.

Synonyms :—

Scolopax holmesii Peale, United States Expl. Exped. 1848, p. 229 : nom. nud., Auckland Islands.

Gallinago aucklandica Buller, Suppl. vol. i. p. 188.

Range :—Auckland Islands (breeding).

Cœnocorypha aucklandica pusilla (Buller). Chatham Islands' Snipe.

Gallinago pusilla Buller, Ibis, 1869, p. 41 : Chatham Islands.

Synonym :—

Gallinago pusilla Buller, Suppl. vol. i. p. 188.

Range :—Chatham Islands (breeding).

Cœnocorypha aucklandica huegeli (Tristram). Snares Island Snipe.

Gallinago huegeli Tristram, Bull. Brit. Orn. Club, vol. i. 1893, p. xlvii: Snares Island.

Synonym :—

Gallinago huegeli Buller, Suppl. vol. i. p. 189.

Range :—Snares Island (breeding).

Cœnocorypha aucklandica tristrami (Rothschild). Antipodes Island Snipe.

Gallinago tristrami Rothschild, Bull. Brit. Orn. Club, vol. iii. 1894, p. xii: Antipodes Island.

Range :—Antipodes Island (breeding).

Genus GALLINAGO.

Gallinago Koch, Syst. baier. Zool. 1816, p. 312.

Type (by tautonymy): *G. gallinago* (Linné).

Gallinago hardwickii (J. E. Gray). Australian Snipe.

Scolopax hardwickii Gray, Zool. Misc. 1831, p. 16: Tasmania.

Synonyms :—

Scolopax australis Latham, Index Ornith. Suppl. 1801, p. lxv: New South Wales. Preoccupied by *Scolopax australis* Scopoli, Annus I. Hist. Nat. 1769, p. 94.

Gallinago australis Buller, Suppl. vol. i. p. 191.

Range :—New Zealand (accidental visitor: one occurrence, Auckland, 26 March 1898); extralimital.

Family PHALAROPIDÆ.

Genus PHALAROPUS.

Phalaropus Tunstall, Ornith. Brit. 1771, p. 3.

Type (by tautonymy): *P. fulicarius* (Linné).

Phalaropus fulicarius (Linné). Grey Phalarope.

Tringa fulicaria Linné, Syst. Nat. 10th ed. 1758, p. 148: Hudson Bay, North America.

Synonym :—

Crymophilus fulicarius Buller, Suppl. vol. i. p. 191.

Range :—New Zealand (accidental visitor : one occurrence, Waimate, South Island, June 1883) ; extralimital.

Family TRACHELIIDÆ.

Genus STILTIA.

Stiltia Gray, Cat. Gen. Subgen. Birds, 1855, p. 111.
Type (by original designation) : *S. isabella* (Vieillot).

Stiltia isabella Vieillot. Australian Pratincole.

Glareola isabella Vieillot, Analyse nouv. Ornith. 1816, p. 69 : Australia.

Synonyms :—

Glareola grallaria Temminck, Manuel d'Orn. 2nd ed. vol. ii. 1820, p. 503 : South Asia.

Glareola australis Leach, Trans. Linn. Soc. vol. xiii. 1820, p. 132 : Australia.

Stiltia isabella Buller, Suppl. vol. i. p. 192.

Range : – New Zealand (accidental visitor: one occurrence, west coast of South Island, 1898) ; extralimital.

[To be continued.]

XIII.—*Further Notes on the Birds of China.*

By J. D. D. La Touche, C.M.Z.S., M.B.O.U.

(Plate VI.)

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(1) *Additions and Corrections to the List of the Birds of Chinkiang, Lower Yangtse Basin.*

A further stay of three years (from November 1907 to November 1910) at Chinkiang on the lower Yangtse has enabled me to add eighteen species to the list previously published in 'The Ibis.' I have included a few birds which, although they do not occur in the immediate vicinity of Chinkiang, are found on the lower Yangtse, north of the port, and are now fairly regularly brought to Chinkiang for sale by the local bird-catchers.

The numbers given to the birds bring them into their places in the former paper, 'Ibis,' 1906, pp. 427–450, 617–641, and 1907, pp. 1–30.

16 *a.* POMATORHINUS STYANI Seebohm.

Pomatorhinus styani Styan, Ibis, 1891, p. 335.

I procured at Chinkiang from the bird-catchers two live birds which had, so the men said, been caught on some hills about fifteen or twenty miles south west of Chinkiang. One of these, which was tame, was, unfortunately, allowed to escape. The other lived in captivity for about a year. It was a female.

25 *a.* LOCUSTELLA OCHOTENSIS Midd.

Locustella ochotensis Styan, Ibis, 1899, p. 287.

An adult male shot on 25 May 1909.

62 *a.* CYANECULA CÆRULECULA (Pall.).

Erithacus cærulecula Styan, Ibis, 1891, p. 338.

I have three examples from Chinkiang:—A female shot on 11 November 1909, a male shot on 29 March 1908, and another male given to me on 6 October 1910.

64 *a.* HENICURUS SINENSIS Gould.

Henicurus sinensis Styan, Ibis, 1891, p. 337.

On 17 April 1909, I came across a pair of this Forktail near Chinkiang. This bird occurs on the hills some twenty miles to the south-west of Chinkiang.

75 *a.* LOXIA ALBIVENTRIS Swinhoe.

Loxia albiventris David & Oustalet, Oiseaux de la Chine, p. 360.

I procured a pair of live birds from the bird-catchers in December 1909. The male had been caught with bird-lime, and probably came from the north of the province.

100. Cotile fohkienensis La Touche.

Cotile riparia La Touche, Ibis, 1906, p. 637.

Cotile fohkienensis La Touche, Bull. B.O.C. vol. xxiii. 1908, p. 17.

The only two Sand-Martins procured by me at Chinkiang were of this new species, which appears to summer in the vicinity. Most probably all those seen by me near Chinkiang were of the same kind, not *C. riparia* L. It is easily distinguished from the latter by its much paler and more uniform upper parts and by its short and nearly square tail.

110 *a.* Anthus cervinus (Pall.).

Anthus cervinus Styan, Ibis, 1891, p. 344.

The Red-throated Pipit occasionally occurs at Chinkiang. I shot a specimen near Chinkiang on 25 April 1909, and saw a number of others on the same day, and also, I believe, on the 10th of October following.

115 *a.* Alaudula cheleensis Swinhoe.

Calandrella cheleensis David & Oustalet, Oiseaux de la Chine, p. 317.

During my second stay at Chinkiang the bird-catchers used to bring baskets full of nestlings, which they said came from the neighbourhood of Haichow, a seaport in Kiangsu, north of the Yangtse. This bird is very abundant, according to Staff-Surgeon Jones, R.N., at Weihaiwei, on the coast of Shantung (*Calandrella pispoletta,* Jones, Ibis, 1911, p. 671).

133 *a.* ? Hierococcyx hyperythrus Gould.

? *Cuculus hyperythrus* David & Oustalet, Oiseaux de la Chine, p. 64.

A young Cuckoo seen on 2 September 1910, in the possession of a bird-catcher at Chinkiang, and which the man assured me had been caught on the Hua Shan Hills, about twenty miles south-west of Chinkiang, seemed to me to be of this species. Its colour was greyish brown above, with chestnut tips or spots on the wing; the crown had a number of white feathers; the underparts were whitish with longitudinal brown spots. The bill was greenish grey, the legs bright lemon-yellow, and the iris grey.

136 *a.* Scops stictonotus Sharpe.

Scops stictonotus Styan, Ibis, 1891, p. 485.

A female was shot on 11 May 1909.

161 *a.* Turtur risorius (L.).

Turtur risorius David & Oustalet, Oiseaux de la Chine, p. 387.

One example was seen in March in the hands of a native, who had purchased it for food. As this Dove wanders down to Fohkien in winter, there is no reason why it should not occur occasionally on the Yangtse.

166. Rallus aquaticus L.

Rallus indicus La Touche, Ibis, 1907, p. 18.

The two Water-Rails taken at Chinkiang during my first stay there are, I have now no doubt, the European Water-Rail. I have since examined a number of examples, all shot at Chinkiang during the winter, which can only be referred to the latter species. It would seem that *Rallus aquaticus* L. winters on the lower Yangtse, and occasionally as far south as Amoy, whence I have one shot in winter, and that *Rallus indicus* winters in eastern China as far north as Chekiang only. The Eastern race travels up to Manchuria in summer. It is a resident in south-eastern China.

178 *a.* Ægialitis veredus Gould.

Charadrius veredus Styan, Ibis, 1891, p. 503.

This bird was met with near Chinkiang on 28 March 1909.

187 *a.* Tringa subminuta Midd.

Tringa subminuta Styan, Ibis, 1891, p. 506.

One male example was shot on 7 May 1909.

201 *a.* Fregata ariel Gould.

Attagen minor David & Oustalet, Oiseaux de la Chine, p. 534.

I saw on 24 August 1908, a Frigate-bird sailing over Consulate Hill at Chinkiang. It had probably been driven inland by a typhoon which had just passed over the Yellow Sea. The bird, which was circling and dipping round the summit of the hill, came twice within view of where I was standing.

202. ARDEA MANILLENSIS Mey.

Ardea purpurea La Touche, Ibis, 1907, p. 25.

This species, recorded by me through a printer's error or *lapsus calami* as *A. purpurea* L., would seem to summer in the vicinity of Chinkiang, as I have a female shot at Chinkiang on 12 July 1908. The ovary was well developed, one ovum being as large as an S.G. shot and the rest of the size of no. 4 shot.

211 *a*. CYGNUS OLOR (Gm.).

A magnificent adult example of the Mute Swan was shot at Chinkiang on 29 January 1909, by Mr. C. Boland, Constable of the British Consulate. I had, together with Father Courtois, S.J., Curator of the Sikawei Museum, seen the bird on the 21st and 23rd of that month on the flooded paddy-fields in the plain near Chinkiang, where it had apparently settled, as the natives told us that it had been there for some days previously. Although it took care to keep well in the middle of the fields, it did not appear to be particularly wild. After a few attempts at stalking it, we left it alone, taking it to be an ordinary wild Swan. The Mute Swan has only once been previously recorded from China—by Captain A. H. Walton from Peking ('Ibis,' 1903, p. 34).

The bird measured in the flesh $64\frac{1}{2}$ in. in total length; wing $21\frac{3}{8}$ in.; bill from gape $4\frac{1}{8}$ in. Weight 21 lbs. The tubercle and face-skin were black, the bill orange-vermilion with a black nail and two small black spots on the upper mandible, iris dark brown, legs black. It was pure white, with the exception of the head and neck, which were yellowish. The specimen has been set up and is preserved in the Shanghai Museum.

213 *a*. ANSER CYGNOIDES (L.).

Anser cygnoides Styan, Ibis, 1891, p. 495.

I saw an example of the Swan-Goose which had been shot on the Yangtse in the Chinkiang District during the winter

222 *a.* QUERQUEDULA FALCATA (Pall.).

Eunetta falcata Styan, Ibis, 1891, p. 497.

The Falcated Teal was shot on the river near Chinkiang by Captain R. Bridgeman, R.N., on 22 April 1908. It is a common Duck at Nanking and generally throughout China.

219 *a.* MARECA PENELOPE (L.).

Mareca penelope Styan, Ibis, 1891, p. 496.

I was shown, during one of the last winters spent at Chinkiang, an example of a Widgeon shot at Nanking.

223 *a.* FULIGULA BAERI Radde.

Fuligula baeri Styan, Ibis, 1891, p. 497.

I have a handsome male example shot on the Yangtse near Chinkiang by Mr. M. Hey, of the Chinese Customs Service, on 4 January 1910.

(2) *Additional Notes relating to Species already recorded from Chinkiang.* The numbers are those of my list of the Birds of the District published in 'The Ibis,' 1906, pp. 427–450 & 617–641, and 1907, pp. 1–30.

8. UROCISSA ERYTHRORHYNCHA (Gm.).

Urocissa sinensis La Touche, Ibis, 1906, p. 434.

A nestling seen in the possession of a bird-catcher on 6 June 1910, had the crown bluish white, the rest of the head black, back and wings very dark brown, the underparts white, the tail-feathers, just emerging from the quill, tipped yellow. Bill pale blue-grey.

21. BUCHANGA ATRA (Herm.).

Some nestlings, seen in the hands of a bird-catcher one year at Chinkiang, were most probably of this species.

38. LANIUS SPHENOCERCUS Cab.

Two specimens of this fine Shrike were shot by the Shanghai Museum collectors near Chinkiang in December 1907.

42. LANIUS SUPERCILIOSUS Latham.

Another adult female was shot on 17 May 1909.

45. Pericrocotus cantonensis Swinhoe.

Several were seen during May 1909, and a nesting pair with a partly built nest noticed on the 22nd of that month.

46. Campophaga melanoptera (Rüppell).

A second example was shot on 8 May 1909.

49. Spodiopsar cineraceus (Temm.).

Young birds seen in the possession of local bird-catchers were said to have come from Haichow, on the coast of Kiangsu, north of the Yangtse.

56. Cyanoptila bella Hay.

Cyanoptila cyanomelæna La Touche, Ibis, 1906, p. 622.

I purchased in October 1909 a young male in particoloured plumage, which lived only until the following spring. This bird, like most of those taken at Shaweishan or seen by me on the lower Yangtse, had unspotted upper parts. It began its moult at the end of December, and early in January a few patches of dark blue had appeared on the upper back, some of the feathers of which on the 16th of January were still partly in the quill. Then patches of bluish black began to show on the sides of the throat and on the breast. On the 16th of January one small blue feather was showing on the forehead at the base of the bill. Had fresh insect food been procurable then, I should most probably have succeeded in rearing this bird to maturity, as it is not a very uncommon cage-bird in China; but it died before the return of the warm weather. This bird had a feeble but pleasant song—a warble broken by the usual Flycatcher's "chack."

58. Xanthopygia tricolor Blyth.

A nestling purchased alive was coloured as follows:—Sides of head, mantle, and upper tail-coverts olive-brown spotted with dull buff; wings blackish brown, quills edged with olive, the larger coverts broadly margined with the same and tipped broadly with dull buff, the lesser coverts spotted with rather bright buffish yellow, thus forming two broad wing-bars; rump yellow; tail like the wings;

underparts greyish white, buffish on the breast, each feather edged with blackish, this edging very wide on the chin, throat, lower neck, and breast. Legs flesh-coloured, tinged with plumbeous. Bill light livid violet.

64. TARSIGER CYANURUS (Pall.).

A few winter near Chinkiang. One was seen on 29 December 1907, and another at the end of February 1908.

72. OREOCINCLA VARIA (Pall.).

An example, shot in winter at Soochow, shows that this bird occasionally winters on the lower Yangtse.

73. PETROPHILA MANILA (Bp.).

Monticola solitaria La Touche, Ibis, 1906, p. 627.

This Rock-Thrush appears to pass Chinkiang regularly on migration. An adult male, shot on 25 April 1908, agrees in size and colouring with the large birds collected at Shaweishan. Two young males, shot on 9 September 1909, are rather smaller, being almost similar in this respect to examples breeding in north China and winter birds from south China. There seem to be two races of this Rock-Thrush: a large bird, with wing 4·62 in. in the female to 5·05 in. in the male, which passes through the lower Yangtse valley and probably summers in Japan, occasionally wintering in south-eastern China; and a smaller bird, with rather less extent of blue on the breast, which winters in south-eastern China, Formosa, and the Philippines, and breeds in northern China. The wing-formula in the two races appears to be rather different: the large bird has the second primary intermediate between the fifth and sixth; the smaller bird has it just under the fifth or equal to it, or sometimes between the fourth and fifth.

76. COCCOTHRAUSTES JAPONICUS T. & S.

Several examples have since been obtained from the local bird-catchers.

78. EOPHONA MIGRATORIA Hartert.

I procured a handsome pair from the local bird-catchers, and saw others in their possession.

89. EMBERIZA PUSILLA Pallas.

Collected in December 1907 near Chinkiang.

97. EMBERIZA YESSOENSIS Swinhoe.

Several examples collected in December 1907 near Chinkiang.

125. HALCYON PILEATUS (Bodd.).

One shot at Chinkiang on 5 May 1909.

154. ACCIPITER GULARIS T. & S.

I have a young female, shot on 17 October 1909, near Chinkiang, by Mr. M. Hey, of the Chinese Customs Service.

168. PORZANA PAYKULLI (Ljungh).

Two live birds were seen on 16 June 1910, in the possession of local bird-catchers.

189. GALLINAGO SOLITARIA (Hodgson).

I procured a fourth example on 4 February 1910.

212. ANSER RUBRIROSTRIS Hodgson.

Greylag Geese were abundant on the Yangtse, in the Chinkiang district, during the winter 1908–09, and several were shot by the foreign residents, generally from a steam-launch. On one occasion a flock of these Geese, which was resting on the river. allowed a large passenger launch which had our houseboat in tow to approach within gunshot, and we secured two out of the flock at fair range.

(3) *Further Observations on the Birds of Fohkien*.*

CORVUS DAURICUS Pallas.

Rickett and I saw three of these Jackdaws near Foochow on 8 November 1896.

PARUS PEKINENSIS David.

Ten examples collected at Kuatun in north-western Fohkien have a long crest and a dull and dark grey mantle. The nuchal spot is small and of a yellowish-white colour. The cheeks and sides of the neck are of the same yellowish white. The underparts are buffish white, the flanks sandy grey.

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* See Ibis, 1899, pp. 169–210, 400–431; 1900, pp. 34–51; 1905, pp. 25–67.

Wing-measurements (in inches) :—

♂ ...	2·06	♀ ...	2·03
Sex ?.	2·14	♀ ...	2·06
♂ ...	2·16	♀ ...	2·10
♂ ...	2·10	♀ ...	2·25
♂ ...	2·22		
Sex ?.	2·22		

The difference between this bird, which appears in our Fohkien notes as *Parus pekinensis*, and the Chinwangtao Coal-Tit (*Parus insularis*) is very marked. I have no examples of *Parus pekinensis* from the vicinity of Peking, but judging from Père David's description and the figure of *Parus pekinensis* in the 'Oiseaux de la Chine,' it has been rightly identified as that species.

[The Chinwangtao bird is *P. a. insularis* Hellmayr.—*W. R. O.-G.*]

STACHYRIDOPSIS SINENSIS Ogilvie-Grant.

Stachyris præcognitus David & Oustalet, Oiseaux de la Chine, p. 224 (part.).

Stachyridopsis ruficeps Styan, Ibis, 1887, p. 222; La Touche, Ibis, 1892, p. 418, 1899, p. 186; Rickett & La Touche, Ibis, 1897, p. 602, 1905, p. 30.

Stachyridopsis sinensis Ogilvie-Grant, Ibis, 1907, p. 184.

Occurs throughout Fohkien.

SCHŒNIPARUS SUPERCILIARIS (David).

Ixulus superciliaris David, Ann. Sciences Nat. (5) xix. 1874, Art. 9, p. 4.

Alcippe brunnea David & Oustalet, Oiseaux de la Chine, p. 217 (part.); Styan, Ibis, 1887, p. 222; La Touche, Ibis, 1892, p. 418, 1899, p. 186; Rickett & La Touche, Ibis, 1897, pp. 601, 602, & 607.

Schœniparus brunneus Rickett & La Touche, Ibis, 1905, p. 29.

Schœniparus superciliaris (David); Ogilvie-Grant & La Touche, Ibis, 1907, p. 182.

In 'The Ibis' for 1899, p. 187, I drew attention to the pale underparts of the Fohkien bird, but, although Rickett and I had recognized the difference, we finally decided to label our Fohkien birds as *A. brunnea,* and all our Fohkien skins sent to the British Museum were thus labelled. There is no doubt that the Formosan and Fohkien birds are distinct, the former standing as *S. brunneus* (Gould).

Babax lanceolatus (Verr.).

A female was shot near Foochow 21 May 1910, not very far up the river. It differs from my three examples of *B. lanceolatus* in having the ground-colour of the underparts pure white and the pale streaks on the side of the neck and on the hind neck also pure white. The central streaks on the feathers of the hind neck are of a very dark rich brown. Wing 3·55 in.; tail 4·50 in. (central rectrices partly in the quill).

Pteruthius ricketti Ogilvie-Grant.

Pteruthius æralatus Rickett & La Touche, Ibis, 1897, p. 601.

Ptererythrus ærilatus La Touche, Ibis, 1899, p. 408.

Pteruthius ricketti Ogilvie-Grant, Bull. B. O. C. xiv. 1904, p. 92.

I have a female example from central Fohkien dated Jan. 1908, proving that this bird is a resident in Fohkien and winters in the hills of the centre of that province.

Elachura formosa (Wald.).

Elachura punctata La Touche, Ibis, 1899, p. 412.

A female dated March 1911, received from Kuatun, north-western Fohkien, is much paler on the underparts than a male from the same locality, the ground-colour of the throat and breast being white. The upper parts are of a very dark brown. Wing 1·83 in.

Phylloscopus subaffinis Ogilvie-Grant.

Phylloscopus affinis Slater, Ibis, 1897, p. 170; Rickett & La Touche, Ibis, 1897, p. 601; La Touche, Ibis, 1899, p. 204.

Phylloscopus subaffinis Ogilvie-Grant, Bull. B. O. C. x. 1900, p. xxxvii; id. Ibis, 1900, p. 585.

Mountains of north-western Fohkien.

Tribura melanorhyncha Rickett.

Tribura melanorhyncha Rickett, Bull. B. O. C. viii. 1898, p. x.

Male, April 1911, Kuatun, north-western Fohkien.

SUYA SUPERCILIARIS Anderson.

Suya superciliaris Rickett, Ibis, 1894, p. 218.

This bird is a resident in central Fohkien, from which locality I have received both winter and summer examples.

LOCUSTELLA STYANI La Touche.

Locustella ochotensis Styan, Ibis, 1887, p. 220 (part.); La Touche, Ibis, 1892, p. 417 (part.).

Locustella styani La Touche, Bull. B. O. C. xvi. p. 21 (1905).

Near *L. ochotensis* Middendorff, but with a much longer and stouter bill. Upper plumage greyer and duller. Terminal bar on the tail-feathers narrow. Second primary equal to the fifth, or between the fifth and sixth.

Adult female (type). Culmen 0·6 in.; bill from gape 0·91 in.; wing 2·60 in.; tail 2·30 in.; tarsus 0·90 in. Collected at Foochow on 2 October 1895.

Four other specimens, one male and three females, collected by me at Foochow and Swatow in 1886 and 1887, and now in the Styan collection at the British Museum, and a female example in the Rickett collection, also at th British Museum, measure in the wing from 2·50 in. 2·90 in.

L. styani was common at Swatow in May 1887. It frequented the banks of the lagoons, running along these on the mud under the mangrove-bushes and other shrubs bordering the lagoons. Those shot at Foochow in the late spring and in autumn were found in reeds at the mouth of the river. I have not met with this bird elsewhere in China.

NILTAVA DAVIDI La Touche.

Niltava sundara David & Oustalet, Oiseaux de la Chine, p. 117; La Touche, Ibis, 1899, pp. 176, 423; Rickett, Ibis, 1900, p. 54.

Niltava davidi La Touche, Bull. B. O. C. xxi. 1907, p. 18.

Description.—Adult male. Most nearly allied to *N. sundara* Hodgson, but larger and with purplish-blue back and scapulars; the sides of the head, neck, chin, and throat with a very strong wash of blue, the neck-spot cobalt-blue, and the lesser upper wing-coverts of a very slightly lighter tint than the back. Iris dark brown; bill black; legs purplish, with pale claws. Total length 7·0 in.; wing 3·75 in.

Adult female. Differs from the female of *N. sundara* in being considerably larger and in having the neck-spot of the same cobalt-blue as in the male. Wing 3·5 in.

This fine Flycatcher was first obtained by Père David at Kuatun in north-western Fohkien. It appears, so far as we know, to be confined to the range of mountains which separates Fohkien from Kiangsi, and inhabits the higher summits of those mountains. It is a rare bird, and very few examples have come under my notice.

CINCLUS SOULIEI Oustalet.

Cinclus pallasi Styan, Ibis, 1887, p. 219; La Touche, Ibis, 1892, p. 414, 1899, p. 193; Rickett & La Touche, Ibis, 1896, pp. 490, 492.

Cinclus pallasi souliei Oustalet, Ann. Sci. Nat. Zool. (7) xii. p. 299 (1892).

Cinclus siemsseni Martens, Orn. Monatsb. 1903, p. 186.

A resident on the hills and mountains of Fohkien.

MUNIA ORIZIVORA (L.).

Padda orizivora David & Oustalet, Oiseaux de la Chine, p. 344.

I have an example collected near Foochow in February. I had already procured it at Swatow. Swinhoe found it at Amoy (P. Z. S. 1871, p. 385).

EOPHONA MIGRATORIA Hartert.

Eophona melanura La Touche, Ibis, 1892, p. 427.

Eophona melanura migratoria Hartert, Vög. pal. Fauna, 1903, p. 59.

It is this small race of *E. melanura* which winters in Fohkien.

CHRYSOMITRIS SPINUS (L.).

Chrysomitris spinus La Touche, Ibis, 1892, p. 427.

I have a male example from central Fohkien, dated January 1903.

CARPODACUS ERYTHRINUS (Pallas).

Carpodacus erythrinus David & Oustalet, Oiseaux de la Chine, p. 350.

A number of examples of this Rose-Finch have been obtained at Foochow during the past few years. I have four collected there in March and one in December. A number of others from the same locality, presented by Rickett, are in the British Museum collection. I had already in 1897 a cage-specimen, said to have been taken near Foochow.

PYRRHULA RICKETTI La Touche.

Pyrrhula nipalensis Rickett & La Touche, Ibis, 1897, p. 602; La Touche, Ibis, 1899, p. 34.

Pyrrhula ricketti La Touche, Bull. B. O. C. xvi. 1905, p. 21.

Description.—Very near *P. nipalensis* Hodgson, but smaller and darker. In the male the centres of the feathers of the crown are very dark, giving a scaly appearance to that part. The white streak under the eye in both sexes is much smaller and duller than in the Himalayan bird.

Iris dark brown; bill light greenish plumbeous, tipped and edged with black; legs dark greyish pink. Wing of the male 3·43, of the female 3·37 in.

This Bullfinch, which Rickett and I had previously confounded with *P. nipalensis* Hodgson, inhabits the mountains of north-western Fohkien.

EMBERIZA PASSERINA Pallas.

Schœnicola pallasii David & Oustalet, Oiseaux de la Chine, p. 321.

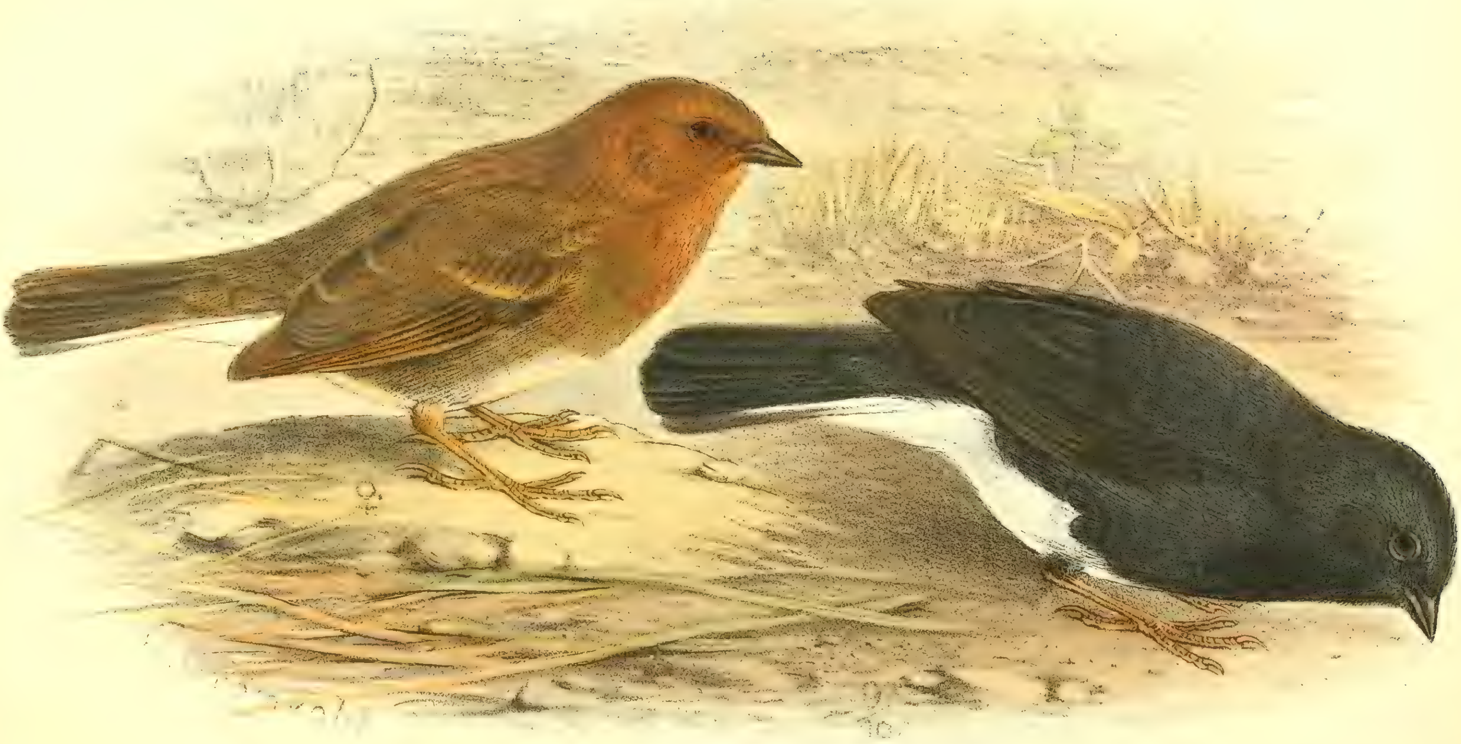
I have several examples taken near Foochow in November 1906.

EMBERIZA ELEGANS Temm.

Emberiza elegans David & Oustalet, Oiseaux de la Chine, p. 322.

Obtained on 11 and 28 November 1901, at Kuatun in north-western Fohkien.

Ibis.1913.Pl.VI.



H.Grönvold del.

West,Newman imp.

JUNCO SIEMSSENI.

JUNCO SIEMSSENI Martens. (Plate VI.)

Junco siemsseni Martens, Orn. Monatsb. xiv. 1906, p. 192.

Two examples, a male and female, were obtained in March at Kuatun in north-west Fohkien. Only one specimen—the male described by Martens, now in the Hamburg Museum—was previously known. The female is here described for the first time.

Description.—Male. General colour slate-blue; axillaries, abdomen, and under tail-coverts pure white; a band of white on the inner webs of the middle secondaries; remainder of wing black, washed externally with slate-blue; rectrices, except the outer pair, also black, washed externally with slate-blue. Outermost rectrices with inner web white except for a longish triangular apical mark. Wing 2·60 in.

Female. Head and hind-neck rufous; upper back rufous brown, centre of the feathers darker, with blackish shaft-stripes; lower back, rump, and upper tail-coverts slate-grey, the feathers a good deal edged with rufous brown; wings hair-brown, quills edged with light rufous brown and coverts broadly edged and tipped with the same; a double bar across the wing formed by the broad pale tips of the larger and lesser wing-coverts; axillaries white. Sides of the head light rufous; throat paler rufous; breast robin-red, shading to rufous brown on the flanks; tibiæ and lower flanks greyish brown; abdomen and under tail-coverts white; tail blackish, with the central rectrices dark brownish grey; inner web of the outer rectrices white, with a brown shaft-stripe at the tip. Bill blackish; legs flesh-coloured. Wing 2·52 in.

COTILE FOHKIENENSIS La Touche.

Cotile riparia Styan, Ibis, 1887, p. 227; La Touche, Ibis, 1892, p. 425, 1899, p. 430, 1906, p. 637; Rickett & La Touche, Ibis, 1905, p. 45.

Cotile fohkienensis La Touche, Bull. B. O. C. xxiii. 1908, p. 17.

Description.—Adult male and female. Near *C. riparia*, but smaller and with a nearly square tail. Uniform pale brownish grey above, lighter on the rump. Under parts pure white, with a rather pale brownish-grey band across the breast. Wing 3·7 to 4 in.; tail 1·7 to 1·78 in.; depth of fork of tail 0·15 to 0·25 in.

The Sand-Martin of southern China is intermediate between *C. riparia* and *C. sinensis,* having the pale upper parts and smaller proportions of the latter, and a tuft of feathers on the tarsus and a pectoral band as in *C. riparia.* It is resident in Fohkien and probably throughout south-eastern China, and it summers on the lower Yangtse. *C. riparia* is recorded by Styan from the lower Yangtse and by Père David from northern China. It passes up and down the coast of Kiangsu in spring and autumn, as I have specimens taken on migration at Shaweishan at the mouth of the Yangtse. It is common as a migrant at Chinwangtao in north-eastern Chihli and appears to summer in that part of northern China. *C. sinensis* is a resident in Formosa, but I have never seen it in south-eastern China.

SURNICULUS LUGUBRIS (Horsf.).

Surniculus dicruroides David & Oustalet, Oiseaux de la Chine, p. 61.

This Cuckoo summers in central Fohkien. Rickett procured an example, and I have two adult males from that locality dated, respectively, April 1908 and 20 April 1909.

CERYLE GUTTATA Vigors.

Ceryla guttata La Touche, Ibis, 1900, p. 44.

I have a young male from Kuatun, dated May 1912. Culmen 1·9 in.; wing partly in the quill, 6·26 in.

CALLIALCYON LILACINA Swains.

Halcyon coromanda Rickett, Ibis, 1894, p. 222.

Another example was shot near Foochow a few years ago.

CAPRIMULGUS MONTICOLA Frankl.

Caprimulgus monticola Swinhoe, P. Z. S. 1871, p. 385; David & Oustalet, Oiseaux de la Chine, p. 67.

I shot a male example of this Nightjar at Amoy on 8 October 1893. It has not so far been taken at Foochow.

STRIX CANDIDA Tickell.

Strix candida Rickett, Ibis, 1894, p. 222, 1900, p. 57.

I have a young bird in down taken in central Fohkien in October 1907. There is a handsome adult example in the Styan collection at the British Museum, which is also from central Fohkien.

NISAËTUS FASCIATUS (Vieill.).

Nisaëtus fasciatus La Touche & Rickett, Ibis, 1905, p. 25.

Two eggs were taken in March on the coast of Fohkien near Foochow. The female, a nearly adult bird, was sent to me together with the eggs. These are ovate in shape and measure 2·75 × 2·00 in. and 2·65 × 2·00 in. One of them is practically pure white, rather discoloured in parts with nest-stains; the other shows a very few faint yellowish-brown spots on the larger end.

ACCIPITER AFFINIS Hodgson.

Accipiter affinis Ogilvie-Grant, Ibis, 1896, p. 107.

A handsome female was shot during the winter 1908–9 in central Fohkien, and is now in the Shanghai Museum Collection. The wing measures 8·45 inches. This example is very similar to a slightly younger bird collected by me in southern Formosa in 1893.

PERNIS ELLIOTTI.

Pernis elliotti Jerdon, Madras Journ. Lit. & Sci. x. p. 74 (1839).

I have a female example of the Indian Honey-Buzzard shot near Foochow on 14 September 1911. This example, which has a small but well-defined crest, agrees in plumage with several female examples from Shaweishan.

[*Cf.* Ogilvie-Grant, Ibis 1897, p. 213. The name *P. ptilorhynchus*, Temm., which is antedated by *P. cristatus*, Cuv., is the proper name for the long-crested island form of Honey-Buzzard found in Sumatra, Java, Borneo, and the Philippine Islands. The short-crested Indian and Chinese form is a very different bird, and may be recognized at a glance from the island bird by having the under surface of the primary-quills black on the terminal half, instead of barred with black and white as in *P. cristatus.*—*W. R. O.-G.*]

TURTUR RISORIUS (L.).

Turtur risorius David & Oustalet, Oiseaux de la Chine, p. 387.

I have two specimens of this Dove from Foochow, and there is another in the collection presented by Mr. Rickett to the British Museum, which was also shot near Foochow. I understand from the Foochow collectors that a few are shot there every winter.

SPHENOCERCUS SORORIUS Swinhoe *.

A female example of a Green Pigeon resembling one obtained at Shaweishan on 28 November 1910, was shot near Foochow in January 1912. This bird would therefore seem to winter in Fohkien. It is possibly this species which Professor Poliakoff collected near Foochow in 1884 (see 'Ibis,' 1892, p. 493), and not *Chalcophaps indica.*

Description.—Upper parts green, shading to yellowish green on the head, the feathers of the hind neck and upper back grey to a large extent, broadly fringed with green. Wing-coverts green like the back, the greater coverts edged with primrose-yellow. Primary coverts and primaries slate-black, the first four primaries edged with primrose-yellow from just beyond the coverts. Secondaries, except the innermost which are green, slate-black with outer webs washed with green and edged with primrose-yellow. Chin and throat bright greenish yellow. Chest bright yellowish green. Breast very pale greyish green, shading to very pale yellowish grey on the abdomen. Anal region white tinged with primrose-yellow. Feathers of upper flanks light slate-grey, broadly edged with green, those of the lower flanks with a slate-grey centre, whitish sides, and green apical margin. Longest under tail-coverts dull yellow with broad grey-green shaft-stripes and reaching to 0·4 inch of tip of central rectrices. Central rectrices and outer webs of side rectrices green. Inner web of side rectrices slate-grey with broad sub-terminal black bar. Underwing slate-grey with the edge dark green.

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* Since the above was written I have found out that the Foochow and Shaweishan Green Pigeons are not identical, and I hope to be able to clear up the matter when the Foochow bird has been compared and identified at the British Museum.

Wing 7·5 in.; tail 5·2 in. Outermost rectrices 1·2 in. shorter than central rectrices.

GENNÆUS NYCTHEMERUS (L.).

Gennæus nycthemerus La Touche & Rickett, Ibis, 1905, p. 58.

I have five eggs taken at Kuatun by the native hunters. One of them is broken; the others measure in inches 2·16 × 1·55, 2·14 × 1·60, 2·08 × 1·57, and 2·07 × 1·55. They are ovate in shape and in colour pinkish buff.

CERIORNIS CABOTI, Gould.

Ceriornis caboti, La Touche, Ibis, 1900, p. 49.

I have a chick, some ten days old, taken at Kuatun in north-western Fohkien in May 1912.

Description.—Crown, nape, and hind neck (in down) very dark burnt sienna. Feathers of interscapular region, scapulars, sides of chest, and flanks deep brownish black, vermiculated with brown and with a pale dull buff drop-shaped spot along the shaft. Rest of back (in down) ruddy brown. A feather or two appear at the base of the tail. The tail is about half an inch long and partly in the quill. Wings hair-brown, exteriorly vermiculated with reddish brown. Lower neck from chin to chest reddish buff. Sides of head and neck rather light burnt sienna, a dark line enclosing the cheeks. Lower parts dull greyish buff. Wing 3·9 inches.

GRUS LILFORDI Sharpe.

Grus cinerea La Touche, Ibis, 1892, p. 495.

Grus lilfordi Sharpe, Cat. Birds B. M. xxiii. p. 252.

I have a female shot near Foochow on 18 March, 1909.

RALLUS AQUATICUS (L.).

I have an adult example shot by me near Amoy on the 1st of January, 1893.

EREUNETES TACZANOWSKII (Verreaux).

Pseudoscolopax semipalmatus David & Oustalet, Oiseaux de la Chine, p. 474, pl. 121.

Ereunetes taczanowskii La Touche, Ibis, 1892, p. 500.

I have two examples shot near Foochow in October 1906. One of these is in fresh winter plumage; the other is assuming the winter plumage and has remains of the breeding dress.

SULA FIBER (L.).

Dysporus sula David & Oustalet. Oiseaux de la Chine, p. 530.

A handsome adult example was sent to me from Foochow last year (1911). It was brought to Foochow in June from the Chekiang coast, where it had been shot by fishermen.

GORSACHIUS GOISAGI (Temm.).

Gorsachius melanolophus David & Oustalet, Oiseaux de la Chine, p. 444 (part.).

Gorsachius goisagi Sharpe, Cat. Birds B. M. xxvi. p. 169.

I have a female shot near Foochow on 5 May 1906, and another example from the same locality dated April 1910. Rickett, previous to his departure from Foochow, had already procured one specimen.

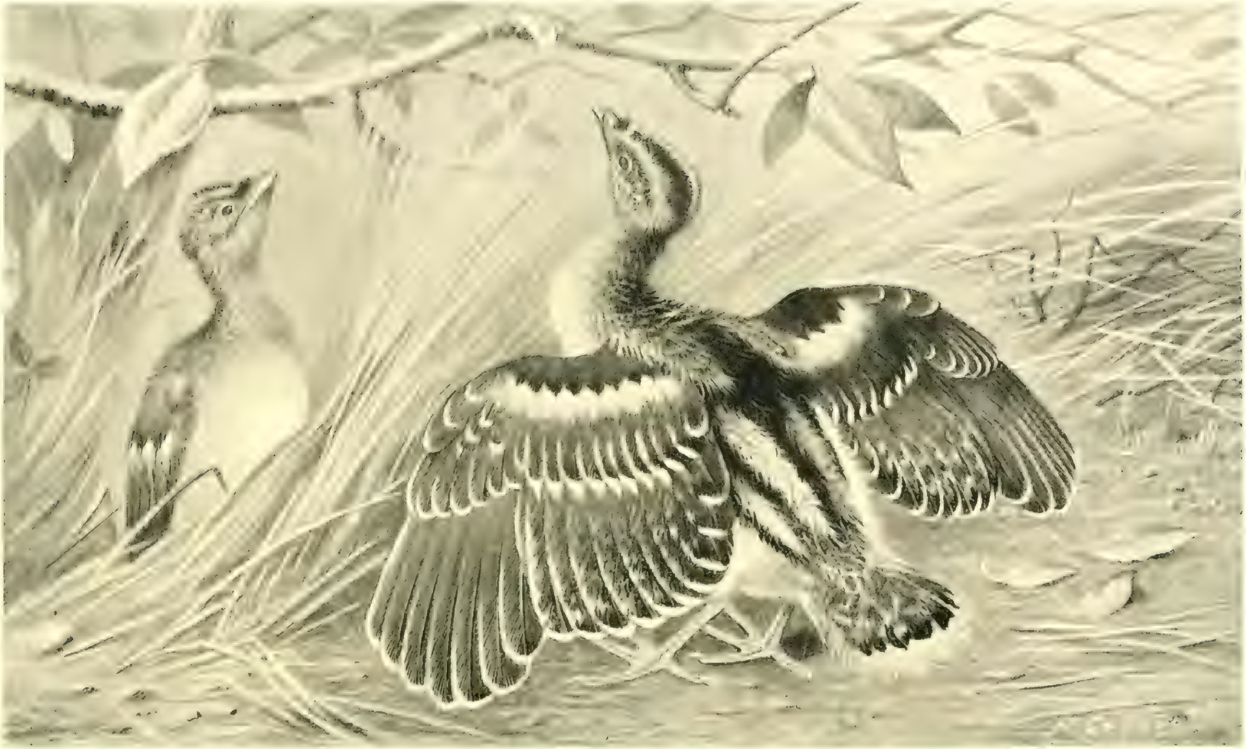
NYCTIARDEA MAGNIFICA O.-Grant.

Nycticorax magnifica O.-Grant, Ibis, 1899, p. 586; id. P. Z. S. 1910, p. 493, pl. xxxiii.

A very fine male example of this handsome Night-Heron was shot near Foochow on 25 October 1911, and is now in my collection. A few years ago an example was seen not far from Foochow by one of the local collectors, who fired at the bird but missed it.

BRENTA NIGRICANS (Lawrence).

The Pacific Brent Goose, which is recorded by Staff-Surgeon Jones from Weihaiwei, on the coast of Shantung ('Ibis,' 1911, p. 681), must occasionally reach the Fohkien coast, as I have a male example shot near Foochow on 4 February 1912.



West, Newman proc

YOUNG GUANS (ORTALIS VETULA).

Mergus squamatus Gould.

Mergus squamatus Ogilvie-Grant, Ibis, 1900, p. 602, pl. xii.

Two adult males of this handsome Merganser were shot in December 1908 on the River Min in central Fohkien out of a party of several individuals. One of these is in the Shanghai Museum and the other in my collection. I have another, also an adult male, shot in February 1911 in the same locality.

XIV.—*Some Notes and Observations on a Guan** (Ortalis vetula), *suggested by an Examination of an Immature Specimen.* By Percy R. Lowe, M.B., M.B.O.U.

(Plate VII. and Text-fig. 1.)

Some little time ago, while comparing some specimens of the genus *Ortalis,* which I had shot in Venezuela and southern Mexico, with those in the collection at South Kensington, I came across a very interesting specimen of an immature example of *Ortalis vetula* from the latter of the two countries mentioned.

If my interpretation of what this young bird teaches is correct, then the Guans (*Ortalis*) would appear to represent an interesting link in the chain of evolution of the life-history of a certain group of birds—in which chain we see at one end the primitive Hoatzin with its unique nidifugous young living an *entirely arboreal* existence, and at the other end the more nidifugous and very precocious offspring of the Megapode, which lays its eggs upon the ground in a mound of fermenting leaves and humus, and which now lives an *entirely terrestrial* existence.

Mr. Pycraft, who has made a special study of nestling birds, has graphically described the structural peculiarities observable in the young of birds at either end of this chain, and has ably interpreted their meaning. In a comparative review of the embryology of the common farmyard chick and other members of the game tribe, he has also indicated some steps in the path along which the descent from the trees to the ground was accomplished.

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* Pronounced locally *Gĕ-wăn-n.*

From the comparative security of the trees to the many hazards of the ground, whatever may have been the reasons which prompted such a departure, the way has doubtless been marked and punctuated by many intermediate developmental adaptations; but of any of these intermediate stages among present-existing birds we seem to have discovered up to the present time no instances, or, at any rate, we seem to have ignored their existence.

In the case of the Guans (*Ortalis*), however, I shall hope in this paper to furnish evidence pointing to the conclusion that while the adult Guan lives an almost complete arboreal existence and has young *which are hatched in nests among trees and bushes*, and that while these young appear to live from almost their earliest days of immaturity the same precocious terrestrial existence which is seen in the case of our familiar game-birds, yet that this habit of nesting in trees which the Guan exhibits is *not an instance of a return to ancestral ways*, or, in other words, a case of reversion, but is, on the contrary, an instance among present-existing birds, which nest in trees, of an incompleted movement in the opposite direction—that is to say, towards the purely terrestrial life seen in many of the more modern types of game-birds.

In his 'History of Birds,' Mr. Pycraft quotes instances in which precocious young, specially adapted to meet the requirements of a terrestrial nursery, are hatched in trees; and these instances he regards as examples of *reversion* to the old ancestral way, among birds, of a purely arboreal life.

Such examples are supposed to occur in the case of the Green Sandpiper, the Noddy and the White Tern, and certain species of Ducks. But these instances, I submit, are not comparable to the case of the Guans.

For while, on the one hand, the parents of the tree-bred young, instanced by Mr. Pycraft, differ as regards their external appearance and habits *in no way from their more orthodox or normal terrestrial or aquatic relations*, the parents of the tree-bred Guans present, on the other hand, not the slightest indication (suggested by structure, or general outward appearance) of their ever having led anything but an arboreal life; so that in this respect (as also in their tree-nesting habits, to which I shall presently refer) they would seem to form a group apart from all other gallinaceous birds.

Thus the absence of spurs * and the low position of the hind toe or hallux in relation to the other toes seem both to be features pointing away from a former terrestrial life.

Again, the unicoloured and neutral tints which characterize the plumage of the Guans, in marked contrast to the generally variegated and patterned plumage of the purely ground-living game-birds, seem by reason of their harmony with the sombre shades of the trees to point to a long-continued arboreal life, or, at any rate, do not bear witness to a recent terrestrial † one. Both conditions of plumage are, of course, protective, but are protectively adapted to totally different kinds of environments, and between them we could hardly wish for a more striking contrast.

Moreover, the adult Guan in its general outward form and shape seems to present characteristics suggestive of a prolonged and purely arboreal existence, hardly less pronounced than in the case of the Hoatzin. By this arboreal stamp or impress I refer to the small, rather pointed, and Pheasant-like head, the long blunt-ended tail (adapted for balancing), the thin and rather long neck, the very attenuated and laterally compressed body (quite unlike the rounded body of ground-living game-birds, and especially remarkable when the bird is plucked), and the rather snaky appearance of the bird generally (much more noticeable when alive and in its natural environments), all of which

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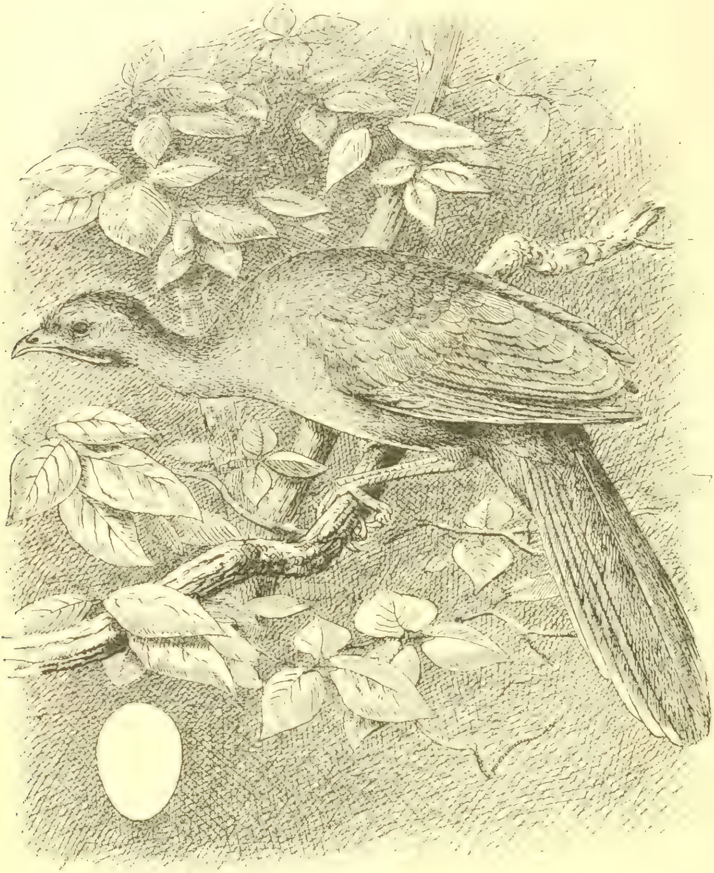
* By this I do not mean to imply that all terrestrial game-birds have spurs, for we know that some have not.

† In making this statement I am aware of the peculiar fact that the Megapode by virtue of its neutral and unicoloured plumage is an exception.

Text-fig. 1.



Adult example of *Ortalis vetula* with an egg drawn to scale.

features have evidently been evolved to enable it to easily insinuate itself between the dense complex of branches among which it lives, and stamp it with such an archaic impress.

Other instances of this purely arboreal stamp and archaic form occur to my mind, in the case of certain Neotropical Cuckoos, such as *Coccyzus* and *Saurothera*, which live an essentially skulking life in the densest thickets.

In these purely arboreal features then, which we have thus briefly referred to, we seem to see represented almost an exact antithesis of what obtains in game-birds which live continuously on the ground ; but if, as some might argue, this complete arboreal equipment has only been developed in an effort to *revert* to an ancestral mode of life, it seems strange that in the immense lapse of time which must have been necessary for its production, the Guan has not, at the same time, been able to completely lift, so to speak, its offspring from the ground to its new home among the trees.

Whether birds were originally *all* arboreal-living or *all* originally terrestrial-living, or even purely aquatic, which seems just as likely, appears as yet to be quite an open question ; but that the purely ground-living game-birds of the present day originally led an arboreal existence seems to be a fact beyond dispute.

If this is so, there must have been stages when the process of descent to the ground was not complete ; and my contention is that in the case of the life-history of the Guan we have such a stage represented in the present day.

Nesting habits of the Guans.

Before continuing our argument however, and before proceeding to the description of this interesting young specimen of a Guan, it may be well to bring forward evidence emphasizing the almost entirely arboreal existence which the Guans live (except perhaps for the possibly short period during which their young are living on the ground), and of the fact, of which I think we now have ample evidence, that they do nest in trees.

To take the nesting-habits first, I will quote the testimony of three observers, which should be sufficient for the purpose.

In a reference to *Ortalis ruficauda* on the island of

Margarita, Mr. Austin Clark ('Auk,' xix. 1902, p. 261) observes:—"The natives told me that this bird was common on the mountains; but I did not succeed in getting any there, although I found several nests which my guide attributed* to this species. They were all about twenty-five or thirty feet from the ground and were large and bulky. One contained a fresh egg (July 9) which was unfortunately broken in being brought down to the ground."

Mr. Claude Grant, in a note on the habits of *Ortalis canicollis* in his paper on the Birds of Paraguay ('Ibis,' 1911, p. 461), remarks:—"On two occasions I saw the nest, which was placed in the topmost branches of a tallish tree and was a fair structure of sticks. According to the natives, the eggs are of about the size and colour of those of the domestic fowl."

Thirdly, referring to the young and nest of *Ortalis leucogastra,* Sclater and Salvin quote the following ('Ibis,' 1859, p. 224):—"The chicks appear to run about *almost as soon as they are hatched* and display great agility in avoiding capture *by clinging* † *to the branches of the underwood.* (Italics ours.) The nest, composed entirely of small twigs, is usually placed in a low bush and contains two creamy-white eggs with rough shells."

To this very suggestive passage I shall refer later.

Finally, Mr. Collingwood Ingram, as the result of a recent visit to Tobago, has kindly furnished me with the following notes on *Ortalis ruficauda*, which, at my request, he took great pains to collect from various sources on the spot:—"The nest is usually placed in a tangled thicket of creepers and vines, &c., about six feet or more from the ground, *never* actually thereon. All my informants were agreed upon this point. It is built of twigs, small sticks, grasses, &c., and is never a mound of dead leaves suggesting a megapode. The young, hatched out by domestic fowls, are said to behave very much like young game-birds until about 14 (?) days old, when they will enter trees or bushes or even climb on to the roof of a low building. In the wild state they are said to leave the nest almost at once. Two eggs appear to be the usual number laid."

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* I have myself seen Guans, which had been caught alive, in Margarita. The bird is well known to the natives there, and is domesticated. It is therefore very unlikely that Mr. Clark's guide could have made any mistake, more especially as there are no birds on the island (in the high woods where the Guan occurs) likely to build a similar nest. The large size and colour of the egg found would also preclude any mistake.—P. R. L.

† The word "*clinging*" used by the field-observer is worth noting.—P. R. L.

Arboreal habits of the Guans.

As regards the almost entirely arboreal existence led by the old birds, every writer who has had anything to say on the habits of the bird emphasizes this point.

I have myself often observed the Guan in Mexico and Venezuela, and I cannot remember ever having seen one on the ground, although I have seen and heard a great number in their natural habitat among low trees and dense scrub. There is, however, I believe, no doubt that they do sometimes descend to the ground.

Mr. Graham Kerr ('Ibis,' 1892, p. 148), speaking of *O. canicollis*, says, for instance, "They occasionally descend to the ground to feed ; but this is comparatively rare."

Guans are indeed, as a matter of fact, timid and sociable birds, which live in small parties below the dense umbrageous foliage of thick and tall bushes or low trees. In Venezuela (*O. ruficauda*) I have met with them in low-lying country covered with dense scrub, or in the thick bush surrounding occasional clearings in the dark and solemn forest.

On the eastern coast of Mexico, where *Ortalis vetula* occurs, I have seen them in dense scrub, where it was very difficult to track them down ; or, again, flying across the backwaters of rivers (with much the same feeble and ineffective flight as is described as characteristic of the Hoatzin) from one dense mangrove or other variety of jungle to another, where it was quite impossible to follow them. This they only did at sunrise and sundown, when they proclaimed their presence by their discordant choruses.

In southern Mexico, in the dense forests which border the smaller tributaries of the Coatzacoalcos, I have once or twice observed small parties in the thick and lustrous green trees which fringed the streams.

Their flight, as I have hinted, is short and feeble, and, unless under great provocation, they display a marked disinclination to take wing. When they do so, they nearly always leave their shelter on the side directly opposite to that from which the observer is approaching; so that the latter seldom has the chance of observing their escape to quite a neighbouring bush. Indeed, on several occasions on which I have observed this habit, I have been unaware that the birds had left the retreat in which I had marked them down, so silently and craftily is their departure made.

Moreover, if it were not for the noise they make at sunrise or sunset or when seriously alarmed, the presence of these birds would seldom be suspected owing to their unusually silent and secretive habits amidst the thick bushes at other times of the day. On the approach of an intruder, one or two birds out of the band occupying a bush or low tree will often descend to the lower leafless branches, from whence they can obtain a more extended view of their surroundings. If reassured, they will then hop upwards, as I have myself observed, from branch to branch and rejoin their fellows in silence. If more suspicious, the whole band, after a few notes of warning from the leader, may burst into the most discordant notes of alarm; after which they will probably, one by one and very silently, take their short and generally unobservable flight to a neighbouring retreat.

On several occasions, when quite unaware of the near presence of a flock of Guans, I have been considerably startled in the gloomy silence of the forest by this sudden hullabaloo, occasioned by perhaps half a dozen birds suddenly breaking out into loud cries of alarm.

Rendered into words, the nearest approach to the chorus with which the Guan (*Ortalis vetula*) greets the sun in the morning and bids farewell to it in the evening, is as follows:—

Catar̄rh-kăttĕr-kĕr-rāh; Catar̄rh-kăttĕr-kĕr-rāh, quickly repeated half a dozen times in a sort of gobbling chorus. The cries are very resonating, as may be easily understood by anyone who takes the trouble to merely pluck the breast of a male bird and expose the then easily visible trachea, which is bent in a long loop upon itself and lies for a great part of its length outside the thorax and immediately beneath the superficial fascia of the pectoral region.

Conformably with its arboreal mode of life, the food of the Guan appears to be chiefly confined to the leaves of certain trees and bushes. What particular species are preferred I am unable to say; but in southern Mexico I once shot a bird out of a flock of some half dozen or so, which I had observed in a tall bush with rather vivid shiny and glossy leaves. The stomach of this bird was packed tight with an almost dry mass of the finely divided leaves of the bush in which the bird had been shot. They had an appearance as if they had been chopped up with some sort of machine. The fruit and seeds of trees and bushes are also said to be eaten.

These pronounced arboreal habits, taken in conjunction with the skeletal features which distinguish the Cracidæ in general from the more modern game-birds, and the fact of the great and extraordinary persistency which has characterized birds in general through immense periods of geological time, make it difficult to believe that a bird which, we must presume, started its career as a tree-dweller, could then adapt itself to an existence on the ground and then again revert to a life in the trees.

Rather, it seems to me more likely that the Guan long ago arrived at a blind alley of evolution and has failed, and will fail, to progress. It is simply marking time. It has probably never been exposed to conditions which differ very greatly from its present existing ones, and so there have never been conditions in its surroundings potent enough to make a descent to the ground a permanent necessity.

It is interesting to note, however, that in Texas, the most northerly limits of the Guan's distribution, and where the conditions are very much drier and consequently the vegetation infinitely more scanty, "the birds are said to nest in the heaps of leaves accumulated under the Mesquite-bushes" (*cf.* Boucard, P. Z. S. 1883, p. 460). If this is true, it seems to illustrate a further step in the descent to the ground, induced by altered conditions of environment.

The fact that the young, as we shall later see, live upon the ground, while the adults spend their existence in the trees, seems to point to the fact that the Guan has either failed to completely adapt itself to one or the other environment, or that there has never arisen the necessity to do so.

In a most interesting account of the habits of the Hoatzin, Mr. Beebe, in 'Our Search for a Wilderness,' remarks:—"Inexplicable though it may appear, the Hoatzin—although evidently unchanged in many respects through long epochs—yet is far from being perfectly adapted to its present environment. It has a severe struggle for existence, and the least increase of any foe or obstacle would result in its extinction."

Indeed, except that the Guan has apparently made one step downwards to the ground, it reminds us forcibly, in point of diet, habits, and ways generally, of the Hoatzin, which is essentially a primitive type of bird addicted to an almost complete arboreal existence (*cf.* J. J. Quelch, 'Ibis,' 1890, p. 327).

Some structural features of the Guan.

To some it may appear venturesome thus to compare the Guan and the Hoatzin; but in many respects the latter bird presents structural features distinctly pointing to its affinities with the Gallinæ, and perhaps in none more so than in its well-differentiated cæcal colon; for it will be remembered that the ileo-colic region reaches its highest state of specialization in birds which live mainly on a purely vegetable diet.

Dr. E. A. Wilson, for instance, has drawn attention, in "The Grouse in Health and Disease" (Report of the

Committee of Inquiry, 1911), to the fact of the special selective function of the cæcal colon in this bird, whereby the rough fibres and undigested debris of heather and other vegetable matter, present in the alkaline chyme when it reaches the specialized colic cæcum, are passed on through the sphincteric tract to the colon; while the more fluid contents are pressed back into the cæca proper, where they undergo an acid digestion through, probably, the agency of bacteria.

Garrod, again, referring to the osteology of the Hoatzin (P. Z. S. 1897, p. 109), says: "I may, however, mention that it is only in the Cracidæ, among allied birds, that the vomer runs so far forward in the palate, at the same time that it is tumified at its anterior extremity. In *Ortalis albiventris* this is most strikingly the case."

Again, he goes on to say: "The presence of two carotid arteries, an ambiens muscle, an accessory femoro-caudal, and a deep plantar vinculum place its non-passerine nature beyond a doubt. Adding the tufted oil-gland and the inch-long colic cæca, the bird could only be related to the Tinamidæ, Gallinæ, or Rallidæ."

That it can have nothing to do with the Rallidæ is evident from the fact that *Opisthocomus* is holorhinal, and Garrod concludes that it must therefore be a Gallinaceous bird or form a group by itself. He adds, that "as there is no Gallinaceous bird without a direct articulation between the pterygoid bones and the basi-sphenoidal rostrum, it is hardly possible to include the Hoatzin along with them; and yet it resembles them most clearly, as it does the Cuculidæ, in the length of its colic cæca and the number of its rectrices." Indeed, as he suggests, it would appear very probable that *Opisthocomus* left the parent stem very shortly before the true Gallinæ first appeared.

Description of a young bird.

This specimen, which is labelled *Ortalis vetula* (Wagl.), Mexico, Cuesta de Misantla, Junio 1888, No. 91. 10. 21. 276 (Salvin-Godman Coll.), is in the collection of the British Museum and is figured on Plate VII.

I think there can be no doubt that anyone examining this juvenile example of *Ortalis vetula*, offhand and without any previous knowledge of what it actually was, would be struck at once with its striking resemblance to the young chick of a "game-bird," and more especially as regards its wings to that of a Pheasant.

A slightly more critical examination would produce the impression that it was a young "game-bird" whose wings and tail had outgrown, so to speak, the rest of its body, or, in other words, whose remiges and rectrices had far outstripped the rest of its plumage in development towards an adult condition.

The head, neck, and body generally, both above and below, are covered with a thick, soft, long and closely disposed down.

This downy plumage on the underparts is more or less unicoloured, the coloration merging from a deep rufous tint on the foreparts of the neck and breast into a pale whitish buff or buffy white over the abdomen and crissum.

The upper parts, on the contrary, present an appearance which we are accustomed to associate with a coloration adapted for purely protective purposes, as is seen in nestlings which are nidifugous and whose parents lay their eggs on the ground (Game-birds, Plovers, Gulls, etc.).

Thus there is, running along the top of the head in the median line, a long stripe of pure black, which extends from the frontal region to well down upon the back of the neck and thence down the median line of the body.

There is a tendency to longitudinal striping on the sides of the head, and the same tendency, but in a more marked degree, is seen upon those parts which are covered by the wings when folded.

The ground-colour in these latter parts is of a light buffy tone, with a tendency to a deep reddish brown along the middle of the lower third of the back.

The seven innermost primaries, the secondaries and tail-feathers, in marked contrast to this general downy plumage, are, as we have previously mentioned, relatively greatly advanced in development, and as regards the general disposition of the colouring and markings on them, the resemblance to those of a young Pheasant is most striking.

There is no need here to go into more detail in regard to this coloration; but a point to be noticed is the pale buffish tips to all the remiges.

Another interesting point to be noticed is that the tail-feathers and all the coverts bear more or less conspicuous prepennal down-feathers (*mesoptyles*). In the case of the median coverts, these prepennæ form quite a conspicuous band or edging which is nearly a quarter of an inch wide (averaging 13·5 mm.) and is of a strong buff or rufous tint. They are only just visible here and there on the tips of the greater coverts.

It is also to be remarked that the feathers which compose the lesser coverts are far less perfectly developed than are those of either the greater or median coverts.

The rami or barbs of these lesser coverts are of the "discontinuous" order and of a more downy nature, although there is a distinct enough rachis.

The scapular feathers are similarly of the same undeveloped or degenerate nature, and in both these and the lesser coverts we seem to have presented to us a stage in the evolution of plumage intermediate between a general downy plumage and the fully developed feathers of the wings and tail.

Finally, we must call attention to the *arrested development of the outer primaries*, a most interesting reminder of a primitive arboreal nursery-life (which in the case of the Hoatzin Mr. Pycraft was the first to bring to the notice of ornithologists); and also to the absence of any visible or tangible evidence of claw-like appendages to the extremities of the manus*, such as are seen in the young Hoatzin in post-embryonic life; while another remarkable feature is the very large size and thickness of the feet and claws, almost twice as heavy and "coarse" as in the case of a young Pheasant of about the same age, with which I compared it.

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* I have since found in the British Museum collection another and younger chick in which claws can be distinctly felt and seen on the thumb. This was in a young example of *Ortalis cinereiceps* (Gray) from the Cordillera de Tole, Veragua.

We thus see that the chief and most striking features to be noticed in regard to this young Guan is a combination of a downy body-plumage, protectively coloured, with a far more than ordinary precocious development of the flight-feathers.

In addition, there seems to be apparently displayed in this one example a sort of epitome of the evolution of feather-development.

Conclusions.

Obviously then, the plumage of this young tree-bred Guan presents characteristics which we are now accustomed to associate with the precocious or nidifugous type of nestling.

But while still showing the arrested development of the outermost primaries, reminiscent of an ancestral and complete arboreal existence, the protectively-coloured down plumage, combined with the accelerated development of the rest of the flight-feathers, marks it as a young bird adapted for a terrestrial existence in the early days of its life.

As we all know now, this protectively-coloured down must have been evolved to enable it to harmonize with its surroundings on the ground; and the advanced development of the flight-feathers must likewise have been found serviceable in order to furnish means for the young chick, not necessarily and solely to escape its many enemies in a precarious environment, but also to enable it to make a more effective pursuit of the many small moths and flying insects which fluttered and flew among the herbage wherein it passed the first days of its life. And this it could do by being able to give small jumping flights into the air, even if it was not actually able to fly for a few feet.

At the present time no observations have been published to enable us to say exactly how long a time elapsed from the day when this chick first saw the light of day in its nest among the trees to the day when its parents first conducted it to the ground.

If, however, we can draw any conclusions from the very large size of the Guan's egg in relation to the very small size of its actual body when stripped of its feathers, then we should be tempted to say that this period must have been reduced to very small proportions.

This disproportion between the size of the bird's naked body and the egg is so great that one wonders how a bird of such slim proportions could possibly lay such a large one.

In other birds, such as the Megapode, it has been recognized that disproportion of such a nature has been evolved in order to allow of the whole of the normal period of the nestling stage to be got through within the shell before the young are hatched ; by which it comes about that the young Megapode from the moment of hatching is fully fledged and can fend for itself.

Taken in conjunction with the remarks made by Sclater and Salvin in reference to the habits of the young of *Ortalis leucogastra* (*loc. cit.*), the large size of the Guan's egg seems therefore to justify us in concluding that the young Guan at the moment of hatching is in a very advanced condition of development ; and that with such a precocious condition of the inner flight-feathers descent from the tree to the ground at a very early stage in its life-history would be rendered comparatively easy.

The fact of the retarded development of the outer primaries and the statement in regard to the agility displayed by the chick in *clinging to the branches of underwood,* is also of great interest, as being reminiscent of ancestral days when it was in all probability entirely arboreal in its habits.

Geological evidence all points to the fact that the further we go back (within limits) the greater proportion of carbon dioxide there probably was in the atmosphere and the greater the density of vegetation ; and it appears to me that those who might hold that the Guan is only in process of again *reverting* to an arboreal existence could only do so by presuming that at some past geological epoch there must have been a sudden retrograde movement in the amount and density of the vegetation on the South American continent, leading to such general conditions that it was more profitable, or indeed compulsory, for the Guan and its congeners to temporarily forsake their arboreal retreats and to descend to the perils of the ground.

To my mind it seems more probable that this attempt to descend has only taken place in comparatively recent times, since the days when we know that vegetation has been generally tending to diminish. A further possible explanation, which is, of course, purely hypothetical, of this more recent tendency to descend to the ground might be sought in some danger to the chick in the trees, such as a gradual increase at some past epoch in the prevalence of tree-snakes. I have on several occasions seen tree-snakes attacking birds, and anyone who has watched a pair of parent birds noisily defending their offspring from the slow and deadly advance of these murderous assailants would allow that such a condition of things as I have suggested might quite possibly have been enough to start the process of a descent to the ground.

Other facts which occur to me as being against reversion are:—

(1) The white (non-protective) coloration of the Guan's egg seems rather to point away from a previous terrestrial existence*, for "It is almost certain," says Mr. Pycraft in his 'History of Birds,' p. 207, "that the eggs of the earliest birds were white, like those of their forebears the reptiles; and further, since these primitive birds were arboreal, that they were laid in holes of trees or under cover. Later, when some migrated from the forest region to the plains or meadows, colour became necessary; firstly for protective purposes, and secondly, probably, as a defence against the action of light, which in excess is inimical to protoplasm."

But granting that this is true, which seems probable, then those who hold that the arboreal existence now led by the Guans (*Ortalis*) is an instance of reversion must also agree to what appears to me to be a very improbable hypothesis, viz., that their eggs were first white; then, as the result of a migration to the ground, coloured; and, finally, as a result of a reversion to their original arboreal life, again white.

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* Tree-Partridges, on the other hand, also lay white eggs.

(2) The fact that in the case of the Curassows and Guans only two eggs are said, as a general rule, to be laid, also seems to point away from a previous terrestrial existence on the part of the adult birds. Most ground-living game-birds lay clutches of eggs which contain a far greater number, presumably to allow for the greater liability to accidents.

(3) Capercaillie, Blackgame, and other such-like game-birds in adult life still spend a good deal of their life in trees, feeding on young shoots, although they nest on the ground and their young are protectively coloured and provided for.

If I understand Mr. Pycraft aright, this would indicate an attempt on the part of these birds to revert to a former entirely arboreal existence. According to my contention, it is rather evidence of an *incomplete descent* to the ground, a state of things arising in the past from the exigencies of local conditions (*e. g.*, vast tracks of pine, larch, and spruce trees, and consequent cramping). In our Red Grouse and Partridge and in the Quail the process may be considered as complete. It is also suggestive to note that in the game-birds as a group, although the nestlings are generally prone to longitudinal stripings, yet when we come to trace these markings from the more primitive to the more modern types the stripes tend to break up into mottlings. Such a condition of things can be roughly traced, for instance, in a series such as the following—Curassow, Guan, Peacock, Blackcock, Capercaillie, Pheasant, Partridge, Red Grouse, Ptarmigan; where a progressive descent to the ground seems to go nearly hand in hand with an increased mottling, or *vice versâ*.

(4) In regard to birds other than those belonging to the Gallinaceous order, Mr. Pycraft (*tom. cit.* p. 247), referring to the Gannets, Cormorants, Frigate-birds, and Pelicans, says: these "now, either sporadically, or in the case of

some species constantly, nest in trees. Such a nesting-place doubtless has only lately been resorted to—it is a *reversion to an ancient custom* [italics ours] and not a survival, as in the case of the Hoatzin."

In the West Indies I am acquainted with the nesting-habits of three Gannets. One of these, *Sula piscator*, invariably nests in trees; but two, viz. *S. cyanops* and *S. sula*, invariably nest on the ground. Yet all three have helpless naked young in the early stages of the nestling period; and it seems to me that it might just as well be argued that originally all Gannets nested in trees; that *S. piscator* has never done anything else; and that in the case of *S. cyanops* and *S. sula* the descent to the ground has been of comparatively recent origin, consequent upon the more arid conditions of their nesting-sites and a gradual and progressive diminution of a lush vegetation in comparatively recent geological periods.

Knowing, as we do, of the far greater widespread prevalence and luxuriance in past ages of the mangrove-plants (Rhizophoraceæ) and mangrove associations—among which *S. piscator*, tropical Cormorants, Frigate-birds, and Pelicans seem to nest *for choice*—I must confess that this last argument appears as worthy of consideration as that which supposes that the arboreal nesting-habit of *S. piscator* is a case of reversion.

But perhaps we have said enough in support of our thesis that in the life-history of the Guan we seem to have at least illustrated among tree-nesting birds an intermediate and living link in the chain of evolution of nidifugous habits, which chain, as Mr. Pycraft has pointed out (Proc. IVth Internat. Ornith. Congr. 1905), began on the one hand with the reptilian method of progression seen in the young of the Hoatzin, and ended on the other with the precocious potentiality for flight (and a complete descent to the ground) as seen in the case of the Megapode and its young.

It may possibly be that some of the facts brought forward, illustrative of the life-history of this most interesting and primitive game-bird, could be interpreted in a contrary sense, and that in this respect I have been perverse; but even if this paper serves only to lead to the establishment of exactly opposite conclusions to those which I have drawn, it will still appear to me to have served a useful purpose, and to have directed renewed attention to a very interesting phase in the history of birds.

XV.—*On* Sterna hirundo *Linn. and on the Name of the Common Tern.* By Prof. Einar Lönnberg, of Stockholm.

[Prof. Einar Lönnberg has sent us the following contribution to the question as to which species of Tern Linnæus was referring when he described *Sterna hirundo*. Prof. Lönnberg was asked for his opinion on the matter, as being a great authority on the life and writings of Linnæus and on the avifauna of Sweden, by the Committee at present engaged in revising the B.O.U. List of British Birds. The matter is of special importance, as, if a conclusion is come to that Linnæus' *Sterna hirundo* is indeterminable, it would logically follow that the genus *Sterna*, which is founded on that species, cannot be used either, and a new generic term would have to be provided for the Terns.]

In order to solve the question as to which bird Linnæus meant when he, in 1758, gave the name "*Sterna hirundo*" ('Systema Naturæ,' ed. x. p. 137), it is necessary to study the earlier writings of the author himself. He quotes 'Fauna Svecica' (1746) in the first rank, and it is evident that "*Sterna hirundo*" 1758 was a common Swedish bird familiar to him.

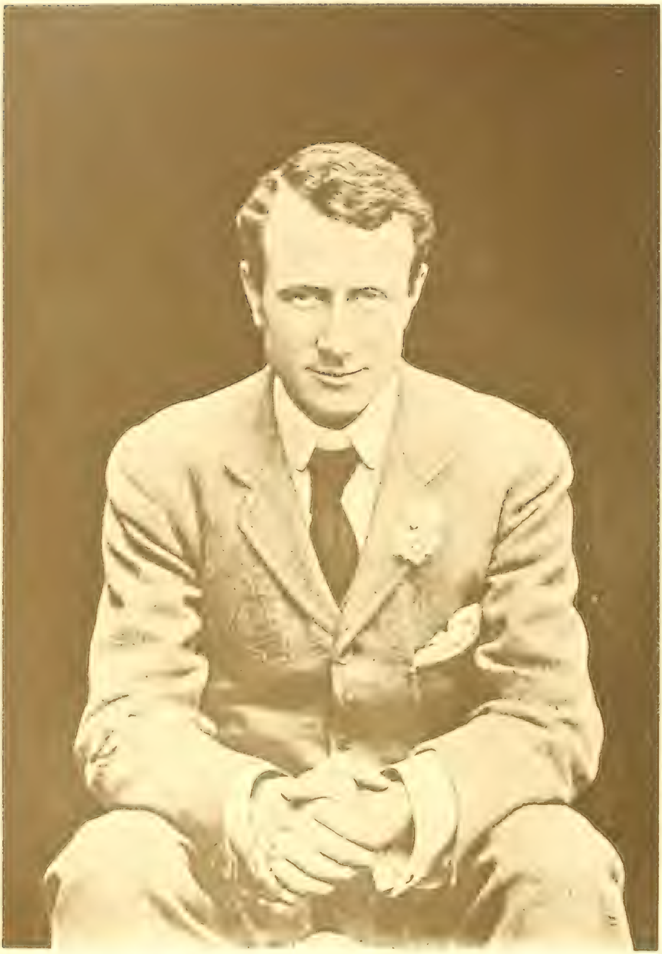
The short diagnosis in 'Fauna Svecica' does not settle whether the *Common* or the *Arctic* Tern is intended, although it is more probable that the former was in his mind when he says: "rectricibus maximis dimidiato-albis nigrisque." The outer web of the lateral rectrices in the Common Tern is, as a rule, much darker than that in the Arctic Tern, and in the latter it is often difficult to call it "niger."

The expression "Habitat ubique ad lacus & stagna" (*i. e.* in Sweden) only fits in with the Common Tern, especially if some little stress is laid on "ubique," as, of course, should be done. The Arctic Tern in this country is chiefly a coast bird, breeding in our Baltic archipelago; it may be found on freshwater lakes occasionally, but this is chiefly in the northernmost parts of the country. The Common Tern is really the common one, "ad lacus & stagna," in Sweden.

The subsequent longer description does not appear to give much evidence, as most of it can be applied to both forms. When, however, it is said "rectricibus utrinque duabus extimis exteriore margine fuscis . . . . ," this suits the Common Tern better than the Arctic. It is chiefly the description of the bill, "Rostrum . . . . rectum, coccineum uti & pedes," which has by some authors been regarded as a proof that Linnæus by this really meant the Arctic Tern, because he does not mention the blackish tip characteristic of the Common Tern. Even some Swedish ornithologists, as, for instance, the late Professor Sven Nilsson, have favoured such an opinion. It is, however, very possible that it is due to an omission that Linnæus did not mention the black tip. He meant, perhaps, that this was of little importance, and the by far greater part of the bill was really red, and that appeared to him the main thing. Linnæus always tried to be concise, and therefore often omitted more important characteristics than this.

Fortunately I am able to give rather conclusive evidence, by means of an analogy, in this case from Linnæus's own hand.

In the library of the Royal University, Upsala, is a Linnean manuscript with the title "Methodus Avium Sveticarum," which was published by the present writer in 1907. This manuscript is of a certain value, because it is in the shape of a small book, and it is quite evident that Linnæus carried it with him in his pocket during his travels to different parts of Sweden and wrote in it notes on birds which were observed by him. Now in this book (p. 39 of the printed



EDWARD ADRIAN WILSON.

edition) Linnæus has described the Tern in the following words:—

> "a rostro ad sinciput caput nigrum usque ad oculos, tota alias alba cum levissima cinerei mixtura. rostrum et pedes sanguinei, supra femora nudi. cauda bifurcata ad basin acutissima. pedes palmipedes, ungues nigri, postico" . . . . [?].
>
> "*Rostrum* subulatum, compressum, acutum, levissime arcuatum superiori maxilla, apice nigricante alias rubro. *nares* oblongæ lineares, ita ut per *utraque* appareat foramen et aer. gibbus in inferiori maxilla. digitus medius longissimus. hinc proximus exterior dimidio brevior, posticus minimus."

There is no doubt that this refers to the Common Tern (*not* the Arctic). But there is also another thing to be observed. We find first a general description which corresponds to some extent with that in the 'Fauna Svecica,' and in this description as well it is briefly stated: "rostrum et pedes sanguinei." Then follows another paragraph with a more detailed description of bill and feet, and in that it is also mentioned, "apice nigricante alias rubro." In the 'Fauna Svecica' this appeared to him less necessary and was omitted.

I therefore have come to the conclusion that Linnæus was referring to the Common Tern and not the Arctic when he described *Sterna hirundo* in 1758.

XVI.—*Obituary.*

Edward Adrian Wilson.

(Plate VIII.)

The terrible Antarctic disaster, which caused such deep and universal sorrow throughout the length and breadth of the civilised world, has deprived us of one of our most able and distinguished naturalists. How Dr. Wilson, principal scientific member of Captain Scott's second Antarctic Expedition, perished with the leader and other heroic companions "from want and exposure" is now a matter of history and will never be forgotten. The little band of five who undertook the final advance, after overcoming almost insuperable difficulties succeeded in reaching the South Pole on the 18th of January, 1912, about a month after Captain Amundsen reached it ; but on their triumphant return towards the base camp, when within eleven miles of a place known as One Ton Depôt, where safety, shelter and supplies awaited them, Captain Scott and his three remaining companions (for one had already died) were overtaken by a terrific blizzard, and all perished. It is not necessary to enter here into the harrowing details which have reached us of how these brave men died, first Seaman Edgar Evans on the 17th of February, then Captain L. E. G. Oates, 6th Inniskilling Dragoons, on the 17th of March, and finally Captain R. F. Scott, R.N., the leader of the expedition, Dr. E. A. Wilson, and Lieutenant H. R. Bowers, Royal Indian Marine, about the 29th of March. On the 12th of November following, one of the search parties, sent out under Mr. Wright, while proceeding along the old southern route sighted Captain Scott's tent and within it found the bodies of the last survivors, together with all the written records and private diaries of the Southern Party.

The heart-breaking story has been read and mourned over wherever the English language is spoken and has commanded the respectful sympathy of all nations. We have at least the satisfaction of knowing that Captain Scott and his companions lived to realise their dearest wish, and reached the goal they so ardently desired. That they should not have been spared to reap the full triumph of their great scientific undertaking will always be a matter of profound regret to their fellow countrymen.

Edward Adrian Wilson inherited his love for ornithology from his grandfather and great-uncle, Edward and Thomas B. Wilson. The latter was settled at Philadelphia, and it was he who purchased and presented to the Academy of Natural

Sciences in that city the collections of Charles Lucien Bonaparte, Prince of Canino and of Musignano, and of many others which helped to make the fame of the Museum of the Philadelphia Academy. Edward Wilson travelled in Europe and secured rare bird-skins for his brother, besides forming for himself a fine collection of humming-birds, some of which were figured in Gould's great work.

The Antarctic traveller was born on the 23rd of July, 1872, and was the son of Dr. Edward T. Wilson of Cheltenham. He was educated at Cheltenham College, and subsequently at Caius College, Cambridge, where he graduated B.A. and M.B., and was placed in the first-class in Part I. of the Natural Science Tripos in 1894. Subsequently, he studied at St. George's Hospital, London, but ill-health compelled him to spend some years abroad. His health had only just been re-established when he joined the 'Discovery' as a member of Captain Scott's first Antarctic Expedition in 1901, and after his trip to the polar regions he returned robust and strong.

In addition to his medical duties on the Antarctic Expedition, Wilson was appointed Vertebrate Zoologist and Artist, and his work is constantly referred to in terms of enthusiastic commendation in Scott's narrative. In one passage that writer says :—

"It would be difficult to say who is the most diligent, but perhaps the palm would be given to Wilson, who is always at work. . . . . Wilson starts his day early by an examination of the breakfast food. His next business is to see to the ventilation of the living spaces, which he does so thoroughly that when we come to breakfast there is no complaint about the freshness of the air, though occasionally people appear in fur mits as a mute protest against the temperature. He next takes the 8 o'clock meteorological observation, and after the men are told off for the work of the day his business takes him to the superintendence of those who are detailed for bird-skinning, and who carry on this work in the main hut. Under his direction a few of the men have become quite expert taxidermists, and the collection of prepared skins is gradually growing. The rest of his day is devoted to working up sketches and zoological notes, making those delightful drawings for the *South Polar Times* without which that publication would lose much of its excellence, and performing a hundred and one kindly offices for all on board."

Wilson was the author of the descriptions of the birds and mammals in the official report on the natural history results of Scott's first expedition to the Antarctic (National Antarctic Expedition. Natural History, vol. ii., Vertebrata, Aves). The volume, which was published by the Trustees of the British Museum in 1907, is illustrated by some very beautiful pictures drawn and coloured by Wilson, and contains an account of his personal experiences and observations during the expedition. Evidence of his unusual abilities, not only as a field-naturalist and accurate observer, but also as an artist are fully demonstrated in this volume. It is of sad interest to note that copies of the last volume (the sixth) of this report, issued last year, were sent out to Scott and Wilson by the 'Terra Nova.' It would have pleased both of them to know that this monumental work had been brought to a close before the arrival of the fresh harvest of natural history specimens, which we may expect by the 'Terra Nova.'

Wilson on the first expedition visited a nesting colony of the Emperor Penguin, and the eggs of that bird brought home by the 'Discovery' were the first specimens seen in any Museum.

He was then able to furnish an account of how the egg and chick are carried about and kept off the ice by being supported on the feet of the parent, and protected by a fold or lappet of heavily-feathered skin descending from the abdomen, which could not, in his opinion, be accurately described as a "pouch." His lecture on the "Life-history of the Emperor Penguin (*Aptenodytes forsteri*)," delivered at the Royal Institution on the 27th of January, 1905, was a most entertaining and altogether delightful discourse; his quiet sense of fun and humour infusing a charm and lightness to his handling of the most scientific facts. An abstract of this lecture appeared in 'The Ibis,' 1905, p. 294. A year earlier, ('Ibis,' 1901, pp. 208–213), he contributed some valuable notes on "The Birds of the Island of South Trinidad," which was visited by the 'Discovery' on the 13th of September, 1901. Subsequently on the second expedition, by making a long and arduous journey and enduring the greatest hardships, he again succeeded in reaching the breeding-ground of the Emperor Penguin at Cape Crozier in the coldest month of the Antarctic winter—a splendid performance requiring the utmost courage and enthusiasm. In this way were secured the much coveted eggs at an early stage of incubation, which it is hoped will throw some light on the early development of the Penguins (see Geogr. Journ. vol. xxxix. 1912, p. 580).

When, in 1904, a Committee of Inquiry was formed to investigate the subject of "Grouse Disease," Lord Lovat (Chairman and prime mover of the scheme) was in search of a suitable field-observer and physiologist. At the suggestion of the writer he attended the meeting of the British Ornithologists' Club held at the Restaurant Frascati on the 15th of March, 1905, for the purpose of meeting Wilson, who was exhibiting photographic slides taken by the members of the 'Discovery' Antarctic Expedition. A friendship was at once formed, Wilson's charm of manner and his quiet and modest ways endearing him to all who came in contact with him. As a result of this meeting he was appointed "Principal Field-observer, Anatomist, and Physiologist to the Inquiry" in November, 1905, and devoted most of his time to the work till the autumn of 1910, when he joined the 'Terra Nova' and sailed on his last Antarctic Expedition.

In 'The Grouse in Health and in Disease—the final Report of the Committee of Inquiry on Grouse Disease,' published in 1911, Lord Lovat writes: "It is difficult to speak highly enough of Dr. Wilson's services, for not only was he an indefatigable worker in the field, but his ornithological knowledge, his scientific training, and his artistic skill, have been of the utmost value in every branch of the Inquiry .... Dr. Wilson's personal qualities secured for him the willing assistance alike of Local Correspondents and Scientific Staff, and went far to ensure whatever success the Committee has achieved."

Another of his colleagues, Dr. A. E. Shipley, has recently expressed his high appreciation of Wilson in 'The Times' of the 11th of February, 1913 :—

"May one who for several years worked with the late Dr. E. A. Wilson offer a small tribute to one of the finest men who ever lived? Although I had known him as a pupil in Cambridge about the middle of the nineties, it was not until the departmental inquiry into the diseases of grouse was established in 1905, under the chairmanship of Lord Lovat, that I really came to know him intimately. From the beginning of our working together I appreciated the fact that my colleague was a man of the very highest character. He was indefatigable in his work, absolutely unselfish, never thinking of his own reputation, but very keen to advance knowledge and achieve results, singularly modest, with a quiet sense of fun and humour: so that he was altogether an ideal man to work with.

"Dr. Wilson was a quite remarkable field naturalist. Little that went on in the open escaped his notice. He could not only see things which the ordinary eye passes by, but he could perpetuate them on paper.

. . . .

"Wilson was a man of indomitable courage, one who never spared himself—characters that were appreciated to the full by Captain Scott. He was very simple in all his habits and very direct in his thought and address, loyal to his friends, staunch to any cause he took up. He had, in fact, the characters of the finest type of an English gentleman."

Wilson was elected a member of the British Ornithologists' Union in 1900, and shortly afterwards joined the Club where, though not a very regular attendant at the meetings, he was one of its most popular members. In 1900 he married Oriana, daughter of the Rev. F. O. Souper, of Comberton Rectory, Cambridge.

While the Grouse Disease inquiry was proceeding, Wilson found time to prepare the illustrations for the new edition of Bell's 'British Quadrupeds,' which is at present appearing, and spent much of his time at the Natural History Museum, working at the various subjects in which he was interested. There, as elsewhere, his premature death will always be mourned. No man was ever more beloved or more thoroughly deserved the high esteem in which he was held by all who knew him. W. R. OGILVIE-GRANT.

Professor ROBERT COLLETT.

IT is with deep regret that we have to record the death of our Honorary Member, Professor Collett of Christiania, which took place in that city on the 27th of January last, and was the result of a severe attack of influenza followed by inflammation of the lungs.

Robert Collett was the eldest son of the late Professor P. S. Collett and of his wife Camille Collett, a well-known Norwegian authoress. The family was of English origin, having settled in Norway towards the end of the 17th Century. He was born in Christiania on the 2nd of December, 1842, so that he was seventy years old when he died. From his earliest childhood he showed a great love of nature and of natural history studies. He was educated at a school at Lillehamen and afterwards at the University of Christiania, where he first of all studied law, but his zoological instincts soon got the upper hand. In 1871 he was appointed to a subordinate post in the Museum of Christiania; here he remained for the rest of his life, having been appointed Director in 1882, and Professor of Zoology in the University in 1884.

Collett was the author of a large number of papers and separate works dealing almost exclusively with the Vertebrate fauna of Norway and the neighbouring countries. The earliest of these, "A Review of the Avifauna of the Neighbourhood of Christiania," published in the 'Nyt Magazin' for 1864, was favourably reviewed in 'The Ibis' of the succeeding year. This was followed by many other papers and reviews dealing with Norwegian birds, while his most popular work, 'Fugleliv i det arktiske Norge,' was translated into English by A. Heneage Cocks and published in 1894 under the title 'Bird Life in Arctic Norway, a Popular Brochure.'

Together with Prof. F. Nansen he collaborated to work out the birds obtained by the former during his celebrated North Polar Expedition of 1893–96; while perhaps his most important work was on the Fishes of the Norwegian North Atlantic Expedition, published in 1880, and on those obtained by Prince Albert of Monaco on his yachts 'l'Hirondelle' and 'Princesse Alice,' published in 1896. His last years were occupied in finishing his large work on Norwegian Mammals, which was only completed last year.

Collett had many friends in England, which he visited several times, and where he was much beloved. He was full of sympathy and kindness, and always ready to help and encourage younger men and to put himself at the disposal of any who sought his advice or help.

He was elected a Foreign Member of the B. O. U. in 1873, and in 1890 was promoted to the list of Honorary Members. His contributions to the pages of 'The Ibis' are as follows:—

"On *Lanius excubitor* and *Lanius major*," Ibis, 1886, pp. 30–40.

"Further Notes on *Phylloscopus borealis* in Norway," Ibis, 1886, pp. 215–223.

"On a Breeding-Colony of *Larus eburneus* in Spitzbergen," Ibis, 1888, pp. 440–443, pl. xiii.

For some of the facts on which this memoir is based we are indebted to Professor Nansen, who kindly sent us some notices of Prof. Collett from the Norwegian newspapers, and to Mr. Grönvold for undertaking the translation of them.

HENRY JOHN PEARSON.

It is with deep regret that we have to record the death of Mr. H. J. Pearson, of Bramcote, Notts, which took place on 8 February at Assiût, in Egypt, where he had gone for the benefit of his health.

Henry John Pearson was born on 30 August, 1850, at Chilwell House, Notts; he was educated privately, and early went into business. He was the founder of the Beeston Foundry Company, of which he was a director up to the date of his death, and in the management of which his brother and two sons were associated with him.

Pearson's tastes were in the direction of Arctic ornithology and travel, and he possessed one of the finest collections of Arctic birds and eggs in this country. He became a Member of the B. O. U. in 1891, but his first excursion of any importance was to the north of Norway in 1893, when he was accompanied by Mr. Edward Bidwell. The results of this journey were published in 'The Ibis' for 1894. He visited Iceland with his brother Charles in 1894, and published a useful paper on the subject in 'The Ibis' of the following year. In 1895 he enlarged the scope of his explorations; chartering a small steamer the 'Saxon,' he visited Russian Lapland, the little-known island of Kolguev, and Novaya Zemlya. As companions he had with him his brother Charles, the Rev. H. H. Slater, and Col. H. W. Feilden. The ornithological results obtained were duly published in 'The Ibis' for 1896. For 1897 he evolved a more ambitious programme, hiring the Norwegian ship 'Laura,' an old sailing-vessel with auxiliary steam-power, and again accompanied by the veteran Arctic navigator Capt. Kjeldsen as sailing-master, with Colonel Feilden and Mr. Curtis as companions, he visited Habarova, the almost unknown island of Dolgoi, Waigats, Novaya Zemlya, Lukke Land, and passing through the Matotschin Scharr entered the Kara Sea; here favoured by abnormally fine weather he examined the east coast of Lukke Land as far north as the Pachtussoff Islands—a remarkable feat. The observations on the bird-life made during this voyage, together with a complete list of the birds observed and recorded, are embodied in a joint paper by Pearson and Feilden published in 'The Ibis.'

Mr. Pearson subsequently gave the results of these two expeditions in a more extended book-form under the title 'Beyond Petsora Eastwards,' a beautifully illustrated volume with valuable appendices on the Botany and Geology of the regions visited.

Another series of ornithological observations were carried out on the Murman coast and in Russian Lapland in the summer of 1899. The results of these were again recorded in 'The Ibis' and subsequently published in his second volume, 'Three Summers among the Birds of Lapland.'

During these excursions the eggs of many rare Arctic birds were obtained, and very full observations were made, all of which were duly recorded in our pages.

Mr. Pearson was also an enthusiastic member of the British Ornithologists' Club, and from 1903–05 served on the Committee and acted as a Vice-Chairman.

It may be stated with truth that no other Englishman since the time of John Wolley has done so much good ornithological work in the Arctic regions of Russia as Henry Pearson. An excellent observer and a most enthusiastic ornithologist, he spared no trouble or fatigue to thoroughly authenticate his observations, which are most reliable. Physically strong, of great energy and resource, he was an excellent traveller and a most agreeable companion.

The following is a list of his papers published in 'The Ibis,' and of the titles of his two separately published works:—

On a Bird-nesting Excursion to the North of Norway in 1893. By Henry J. Pearson & Edward Bidwell. Ibis, 1894, pp. 226–238.

On the Birds observed in Iceland in 1904, with a List of the Species hitherto recorded therefrom. By Henry J. & Charles E. Pearson. Ibis, 1895, pp. 237–249.

Notes on Birds observed in Russian Lapland, Kolguev, and Novaya Zemlya, in 1895. By Henry J. Pearson. With Introductory Remarks by Col. H. W. Feilden, C.M.Z.S. Ibis, 1896, pp. 199–225.

Notes on the Birds observed on Waigats, Novaya Zemlya, and Dolgoi Island, in 1897. By Henry J. Pearson. Ibis, 1898, pp. 185–208.

Notes on the Birds observed on the Northern Parts of the Murman Coast, Russian Lapland, in 1899. By Henry J. Pearson. Ibis, 1899, pp. 520–538.

Beyond Petsora Eastwards; two Summer Voyages to Novaya Zemlya and the Islands of Barents Sea. By Henry J. Pearson. With Appendices on the Botany and Geology by Col. H. W. Feilden. London, 8vo., 1899.

Three Summers among the Birds of Russian Lapland. By Henry J. Pearson. With a History of Saint Triphon's Monastery and Appendices. London, 8vo, 1904.

XVII.—*Notices of recent Ornithological Publications.*

Alexander on Boyd Alexander's Last Journey.

[Boyd Alexander's Last Journey. With a Memoir, by Herbert Alexander. 296 pp. London (Edward Arnold), 1912.]

We are all glad to be able to read the journal kept by our friend and colleague, the late Boyd Alexander, during his last memorable expedition. After examining the islands in the Gulf of Guinea, and making complete collections of their birds, he took a long turn northwards to the Lake Chad district, intending to make his way home by the dangerous route through Wadai, on the confines of which he lost his life.

The part of his Diary in the present volume relates to his journey through the German Colony of Cameroon, where he met with a most friendly reception, but he likewise received efficient assistance from the French officers in the Chad district, and it was by their assistance, we believe, that his last collections and notes were recovered and brought home. No better testimonial to his memory and fame could have been made than the publication of the diary of his last journey, which is now before us. It is prefaced by an account of his childhood, education, and early days, and, besides other illustrations, contains an excellent likeness of our much lamented friend.

For further details on Boyd Alexander's life and work Mr. Ogilvie-Grant's excellent article in 'The Ibis' for 1910 (p. 716) should be consulted.

Alston on the Highlands of Scotland.

[Wild Life in the West Highlands. By Charles Henry Alston. With illustrations by A. Scott Rankin. xii + 272 pp., 9 pls. Glasgow (Maclehose), 1912. 8vo. Price 6*s*.]

Mr. Alston has reprinted a series of essays on natural history subjects, most of which originally appeared in the 'Scotsman.' One of these deals with the White-tailed Eagle, which is chiefly made up from quotations from Gray and

Harvie Brown and other writers, and there does not appear to be very much first-hand observation either in this or any of the other chapters, but they are pleasantly written and may serve their purpose of interesting some whose attention would not be otherwise drawn to such studies.

Bent on a new Crossbill.

[A new Subspecies of Crossbill from Newfoundland. By A. C. Bent. Smiths. Misc. Coll. vol. xl. No. 15, 1912, pp. 1–3.]

Scotland has a Crossbill of its own, and why should not Newfoundland also have a special representative of this widely spread form? Mr. Bent says that it has, and bases his *Loxia percna* on eighteen specimens, besides which there are similar examples in several of the principal American Museums. It is a subspecies of *L. curvirostra*.

Blaauw's Excursion to South America.

[Across South America to Tierra del Fuego and back through the Smith Channel. By F. E. Blaauw. Notes Leyd. Mus. vol. xxxv. 1912, pp. 1–74, 2 plates.]

Our friend Mr. F. E. Blaauw has made a successful expedition to Argentina, and thence over the Andes by the new Transandean Railway to Chili, Patagonia, and Tierra del Fuego. His experiences, as related in his Journal, will be read with great interest, and no doubt induce others to follow his lead. The route is easy now-a-days, and the attractions of Nature on it are great and varied. But those that expect good hotels and first-rate accommodation will, we fear, be disappointed.

Mr. Blaauw started from Amsterdam on the 1st of February, 1911, and was back in Holland on May 29th, showing how much an active traveller can do in four months. Landing at Buenos Ayres he crossed by the newly completed railway to the Pacific coast, and thence travelled by steamer and railway to Punta Arenas and Tierra del Fuego. On the Pacific side several very interesting excursions were made. Every page of Mr. Blaauw's Journal contains field-notes on animals and plants—especially such as relate to Birds. It is a pity that he did not take a taxidermist with him, but then he would not have "got through" so quickly. Moreover, the Avifauna of this end of South America is pretty well known. Crawshay's 'Birds of Tierra del Fuego' is, we believe, not yet out of print, and James's 'New List of Chilian Birds' is not obsolete. Besides, Mr. Blaauw is an excellent observer, and has an unrivalled knowledge of the fine Ducks and other water-fowl of this part of the world, based especially on specimens living in his own Menagerie. We believe that those species to which he has added the scientific names may be considered to have been correctly determined. As regards the controversy whether there is more than one species of Steamer-Duck in Antarctic America, Mr. Blaauw is of opinion that there are two distinct forms, one of which, the typical *Tachyeres cinereus*, is a big and heavy bird and is quite unable to fly; it is absolutely confined to the sea, and was seen by Mr. Blaauw in large numbers in Smith Channel. The other species, which, if distinct, should be called *Tachyeres patachonicus* King, was repeatedly seen by Mr. Blaauw flying high overhead and was common in Tierra del Fuego, especially on the freshwater lakes inland. In recent years Salvadori (in the 'Catalogue of Birds') and most other authors have been of opinion that there was only one species of Steamer-Duck, but Capt. Abbott, who wrote on the birds of the Falkland Islands ('Ibis,' 1861, pp. 161–162), was, like Mr. Blaauw, quite convinced that there were two species, a flying and a flightless one, and that both occurred in the Falkland Islands.

Brabourne and Chubb on the Birds of South America.

[The Birds of South America. By Lord Brabourne, F.Z.S., M.B.O.U., and Charles Chubb, F.Z.S., M.B.O.U. (Zoological Department, British Museum). Vol. i. List, pp. xx+504. London (Porter), 1912. L. 8vo.]

The authors of the important work of which the first volume is now before us have set themselves to a long and heavy task, which, however, we trust they will bring to a satisfactory conclusion. Mr. Charles Chubb, who is well known to all Ornithologists that visit the Bird-room at

South Kensington, has an extensive knowledge of South-American birds; while Lord Brabourne has already visited South America for collecting-purposes, and is now, we believe, in Peru, endeavouring to improve his personal knowledge of its attractive Avifauna.

The authors have thought it expedient to commence their labours by a nominal list of the species of birds which they propose to treat of, and in some cases this is, no doubt, a very good plan. But as regards South-American birds the number of species is so large, and many of the districts embraced in its area are so little explored, that a large number of additions and alterations will be required in "the second edition," as we may venture to call it, which may prove to be rather confusing. Besides, the army of "splitters" is daily increasing, and we have no doubt that large additions will be made to the 'List of South American Birds' before the authors have finished their work.

The geographical limits recognized in this List do not quite coincide with those of the Neotropical Region, as Central America, the Antilles, and the Galapagos, all of which certainly belong to the Neotropical Region, are not included. It is true that the West India Islands have been well worked by our friends in the United States, and that the birds of the Galapagos deserve a separate treatment. But we think it would have been better to have included Central America, as it has many representatives of what are strictly South-American types (*Cotinga*, *Chasmorhynchus*, &c.). But Central America has been fully treated in Godman's splendid 'Biologia Centrali-Americana' and is comprehended in Mr. Ridgway's great work which is still unfinished, and perhaps hardly requires another investigation at present.

The systematic arrangement and nomenclature of the present work are those of Sharpe's 'Hand-list' or nearly so. We note, with pleasure, that the authors have not, so far, found it necessary to employ "trinomials," although they threaten to do so in the complete work. We trust, however, that they will be able to avoid this pit-fall, or, at any rate, will not give the subspecies the same rank as the species.

Finally, we may express our satisfaction at the quotations in this work, and the almost complete absence of printer's and Editor's errors. The paper and print are also excellent.

Four thousand five hundred and sixty-one species are listed in the 'Birds of South America,' and are referred to eight hundred and seventy-four genera.

Bryant on Birds and Grasshoppers.

[Birds in relation to a Grasshopper Outbreak in California. By H. C. Bryant. Univ. Cal. Publ., Zool. xi. 1912, pp. 1–20.]

In this country, happily, we do not suffer much from the ravages of such insects as locusts and grasshoppers, but, as is well known, in many other parts of the world the destruction of growing crops by insects is most serious. Any means that can be found for lessening the plague of insects are therefore most welcome; and it has been discovered that one of the most successful remedies is supplied by Nature in the form of insect-eating birds, some of which at certain seasons appear to subsist entirely on grasshoppers.

The essay now before us contains full particulars on this subject, and contains the names of the birds that are chiefly concerned in this excellent work, as proved by an examination of their stomachs. The American "Meadow-Lark" (*Sturnella*) is stated to live almost entirely on grasshoppers where they are abundant, and the little Burrowing Owl is mentioned as a most efficient destroyer of these noxious insects.

Hellmayr on Two new Birds from the Timor Group.

[Descriptions of Two new Birds from the Timor Group. By C. E. Hellmayr. Nov. Zool. xix. 1912, pp. 210–211.]

The new forms are named *Dicæum hanieli* and *Neopsittacus iris wetterensis*. The first-named was discovered by Mr. C. B. Haniel, the second by Mr. H. Kühn.

Horsbrugh on South African Game-birds.

[The Game-birds and Water-fowl of South Africa. By Major Boyd Horsbrugh, with Coloured Plates by Sergeant C. G. Davies. xii + 160 pp., 65 pls. London (Witherby), 1912. 4to.]

This work, now completed, was issued in four parts, the first of which has already been noticed ('Ibis,' 1912, p. 670). The three remaining parts deal with Francolins, Quails, Guinea-fowls, Sand-grouse, Pigeons, and Ducks, and the last plate illustrates the Hadadah Ibis. It is a little difficult to understand on what principle this last bird and some others were selected to the exclusion of such forms as the Bald Ibis, the Cranes, and Flamingos, but we may conclude that only those species are noticed which ordinarily come in the way of the sportsman for whom the book is obviously designed. The coloured figures are accurately drawn and coloured, though perhaps in some cases the attitudes are a little stiff, but they reflect great credit on Sergeant Davies, who has in most cases watched the originals in their native haunts. The letterpress is short and to the point, and is largely founded on the information in Sclater & Stark's 'Fauna of South Africa,' supplemented by field-notes by the author and the artist; the latter's experiences having been in Pondoland and East Griqualand, while those of Major Horsbrugh himself were chiefly in the Orange Free State and Transvaal. The work will be most useful to all sportsmen and naturalists living in South Africa.

Howard on British Warblers.

[The British Warblers: a History with Problems of their Lives. By H. Eliot Howard. Pt. 7; 74 pp., 3 col., 5 plain pls. & 2 maps. London (Porter), 1912. 8vo.]

In this part of his work Mr. Howard gives us a short account of the Great Reed- and Aquatic Warblers and a very full life-history of the Marsh-Warbler. The two former call for no special comment, but the last is particularly interesting to those who study this group of birds, both on account of its likeness to the Reed-Warbler, with which not so very long ago it was constantly confounded, and also on account of the difference in its note and habits. As usual, the author devotes much space to the two questions of the birds' special "territories" and their emotional behaviour—here particularly to the latter. He institutes a close comparison between the Marsh- and the Reed-Warbler, showing that the latter is much more emotional, of a much more active habit, and an exceptionally fine mimic. We ought to be grateful to Mr. Howard for giving us such an insight into the ways of a species still none too well understood, coupled with admirable pictures of the male and female in various attitudes by Mr. Grönvold, figures of the nest in different positions, and maps to show the approximate dates of arrival as compared with that of the Reed-Warbler. Equally good coloured plates are given of the Garden-Warbler, Marsh-Warbler, and Subalpine Warbler—in the first case accompanied by the young.

Ingram on the Birds of Yunnan.

[The Birds of Yunnan. By Collingwood Ingram. Nov. Zool. xix. 1912, pp. 269–310.]

Yunnan is one of the largest and least-known provinces of the Chinese Empire, and, until recently, was quite unsafe for Europeans. But one of Mr. Alan Owston's Japanese collectors has managed to make a collection of birds there, which, after passing through Mr. Ingram's hands, came to the Tring Museum, and forms the basis of this paper.

Mr. Ingram has carefully studied the accounts of all the previous collections made in Yunnan by Anderson, Wingate (see 'Ibis,' 1900, p. 573), Oustalet, and others, and has compiled a complete list of the species recorded by previous authorities. It is lengthy, containing the names of 352 species, but it will have to be considerably increased, we expect, when the country has been more thoroughly worked out.

One new subspecies is named *Eudynamis orientalis harterti*.

Van Kempen on the Birds of the North of France.

[Contribution à l'étude des oiseaux du Nord de la France. Par Ch. van Kempen. Bull. Soc. Linn. du Nord de la France, Amiens, 1912, pp. 1–62.]

This is merely a list of specimens of birds in the collection of the author obtained in the three departments of Somme, Nord, and Pas de Calais. Mr. van Kempen's collections are large and contain over 20,000 examples, of which 8,720 are European.

Menzbier's Zoo-geographical Atlas.

[Zoo-geographischer Atlas, 30 Bildertafeln, die die Tierbevölkerung des Festlandes der Weltkugel nach den zoologischen Regionen illustrieren, samt dem erklärenden Texte und einer Karte der zoologischen Regionen. Die Tafeln sind unter Leitung von Prof. Menzbier vom Kunstler W. A. Watagin angeführt. Pp. 1–31, 30 pls. Moskau (Sabaschnikoff), 1912. Folio.]

This work by our esteemed Foreign Member, Prof. Dr. Michael Menzbier of Moscow, consists of a portfolio of thirty coloured plates illustrating the mammalian and avian faunas of the different zoo-geographical regions and subregions of the world. Accompanying this is a text in parallel Russian and German columns in explanation of the plates. The regions adopted are those of Sclater and Wallace, and are shown on a map of the world printed with the text. The work, Prof. Menzbier informs us, was originally planned for lectures on geographical distribution to the students of the University of Moscow, and is now published in the hope that it may be of use to other schools and colleges.

Mitchell on the Early Life of Birds.

[The Childhood of Animals. By P. Chalmers Mitchell, M.A., LL.D., F.R.S. With coloured plates by E. Yarrow Jones, M.A., and drawings by R. B. Brook-Greaves. xiv + 270 pp., 12 plates. London (Heinemann), 1912. 8vo. Price 10*s*.]

During Christmas time of 1911–12 Dr. Chalmers Mitchell was called upon to deliver the usual course of lectures "adapted to a juvenile auditory" at the Royal Institution.

These he has expanded and enlarged into the volume now before us, in which he attempts to bring together observations old and new on that period of the life-history of animals between birth and maturity. Only a small proportion of the work deals directly with birds, but there are chapters on the duration of youth, the colours and patterns, and brood-care in birds, all of which may be read with profit by ornithologists, though no very startling new hypotheses are propounded.

A word must be said for the coloured illustrations, which certainly form a remarkable departure from the usual style. They were originally painted by Mr. Yarrow Jones on Japanese silk, and have been reproduced with great skill. Although in no sense would they be useful in a systematic treatise, they have a character and individuality which impresses itself at once on our imagination, and may perhaps reveal characteristics not easily described in words or diagrams.

Rothschild and Hartert on Birds from New Guinea.

[List of a Collection of Birds made by Mr. Albert Meek on the Kumusi River, North-eastern British New Guinea. By the Hon. Walter Rothschild and Ernst Hartert. Nov. Zool. xix. 1912, pp. 187–206.

List of Birds collected by Mr. A. S. Meek at Haidana, Collingwood Bay, in North-eastern British New Guinea. Nov. Zool. xix. 1912, pp. 207–209.]

In the first paper the authors discuss a collection of birds made by Mr. A. Meek on the Kumusi River—which lies at the extreme north-eastern corner of New Guinea, close to the German boundary—in 1907. Examples of 119 species were obtained, of which *Pitta mackloti oblita*, *Machærirhynchus flaviventer novus*, *Coracina papuensis meekiana*, *Ptilotis analoga vicina*, and *Pinarolestes megarhynchus superfluus* are characterized as new subspecies.

The second paper contains another list of birds made by the same collector at Collingwood, being also on the north-eastern coast of New Guinea but further to the east, about halfway between the German frontier and the eastern extremity of the island. Examples of thirty-five species were obtained, but none of them are characterized as new.

Salvadori on Birds from the Congo.

[Secondo contributo all' ornitologia del Congo per T. Salvadori. Ann. Museo Civ. Stor. Nat. Genova, xlv. 1912, pp. 444–456.]

This paper may be considered as supplemental to a similar one previously published by the same author (see Ann. Mus. Civ. Genova, xliv. pp. 320–326). It contains an account of two more small collections made in Congoland by M. Ribotti. The specimens are 103 in number, which are referred to 80 species. In the former collection some rare species were represented; in the present series most of the species are well known, but deserve to be recorded as occurring within the limits of the Belgian Congo.

As yet the birds of the vast area of Congoland seem to be very imperfectly known. We are told there is a large series of them in the new Museum of the Congo at Tervueren, near Brussels, but that no ornithologist can be found there to undertake the study of them.

Sarudny and Härms on Persian Birds.

[Bemerkungen über einige Vögel Persiens. Von N. Sarudny und M. Härms. Journ. f. Ornith. 1912, pp. 592–619.]

This somewhat lengthy paper deals with three species only, obtained and observed by the authors in 1900–1 in eastern Persia and Baluchistan, viz., *Passer yatii*, *Cinnyris brevirostris*, and *Pycnonotus leucotis*. The first-named is a very rare bird which had only been once previously obtained, but our authors secured at least 186 examples, and give a detailed account of its range, habits, nests, and eggs. The nests are most remarkable, with tubular openings ten to fourteen inches long, leading upwards or sideways, quite unlike those of the other species of the genus. Six varieties of these nests are figured. They were found in large numbers in the tamarisks about the delta of the river Helmund in Seistan.

Stresemann on Birds from the Indo-Australian Region.

[Ornithologische Miszellen aus dem Indo-Australischen Gebiet. Von Erwin Stresemann. Nov. Zool, xix. 1912, pp. 311–351.]

This is a series of small monographs relating to various birds and groups of birds of the Indo-Australian Region, revised principally from specimens in the famous museum at Tring. It forms a preliminary account of the collections made by the author during the Second Freiburg Moluccan expedition (see p. 338).

The subspecies treated are of the following genera and their allies:—*Lamprocorax, Gracula, Anthus, Munia, Ploceus, Pratincola,* certain groups of Muscicapidæ, *Dendrobiastes, Cacomantis, Centropus, Eos, Criniger, Stigmatops, Zosterops,* and *Collocalia.*

The writer is obviously well acquainted with his subject, and gives us much useful information as to the ranges of the birds and their position in the system.

The following names are now published for the first time:—

Anthus richardi albidus, Munia punctulata blasii, Pratincola caprata albonotata, Phylloscopus trivirgatus parvirostris, Dendrobiastes hyperythra alifurus, Centropus bengalensis sarasinorum, Eos bornea rothschildi, Criniger affinis harterti, Stigmatops indistincta nupta, S. argentauris patasiwa, Zosterops palpebrosa harterti, Z. p. foghaensis, Collocalia linchi oberholseri, C. francica assimilis, and *C. f. reichenowi.*

Thienemann on the Migration of the Woodcock.

[Untersuchungen über den Zug der Waldschneppe (*Scolopax rusticola*) im Herbst 1909 und 1910 in den Provinzen Ostpreussen, Westpreussen, und Posen. Journ. f. Ornith. 1912, pp. 175–243, Taf. 6.]

Mr. Thienemann, who is the director of the Bird Observatory at Rossitten in East Prussia, has amassed a very large number of reports on the autumnal migration of the Woodcock in the eastern portion of Prussia. These are arranged and presented in the paper here quoted. As is well known, the Woodcock migrates at night in large parties, and the author has found that the mass of migratory birds arrive and again depart on certain critical days in October in vast numbers. All the results arrived at are plotted down on a map which accompanies the article.

Tschusi on Palæarctic Birds.

[Ueber palæarktische Formen, von Viktor, Ritter von Tschusi zu Schmidhoffen. Orn. Jahrb. xxiii. 1912, pp. 216–220.

Massenauftreten der Wacholderdrossel (*Turdus pilaris* L.) im Oberösterreich. *Id.*, Ornith. Monatsschrift, xxxvii. 1912, pp. 154–155.

Zur Geschichte der Ornithologie in Steiermark. *Id.*, Mitt. Naturv. Ver. für Steiermark, xlviii. 1912, pp. 361–375.]

The author in the first paper describes four new subspecies of Palæarctic birds, viz., *Riparia riparia fusco-collaris* from southern Dalmatia, *Locustella fluviatilis obscura* from Bosnia, *Loxia curvirostra corsicana* and *Coturnix coturnix corsicana* from Corsica.

The second note deals with a sudden eruption of Fieldfares and Redwings in Upper Austria in November, perhaps attracted by the ripe service berries. The third contains some account of the Ornithologists of Styria and of their work.

Uchida on the Birds of Formosa.

[A Hand-list of Formosan Birds. By Seinosuke Uchida, Ornithologist in the Bureau of Agriculture, Tokyo. Ann. Zool. Japon. vii. 1912, pp. 137–214.]

This is a useful list, compiled by the Ornithologist of the Bureau of Agriculture of Japan, from previous authorities, and from the study of the collections at Tokyo. It enumerates 290 species, and gives short notes on each of them. Since the last important work on the birds of Formosa was published by Messrs. Ogilvie-Grant and La Touche in this Journal ('Ibis,' 1907, p. 151 and p. 254), some remarkable additions have been made, among which the most important are the species lately described and figured by Mr. Ogilvie-Grant in this Journal (see 'Ibis,' 1912, p. 642). But we have little doubt that as the opening of Formosa by the Japanese goes on, further discoveries will be made. In the present list twenty-one additional species, not hitherto recorded from the island, are noted, bringing the total number to 290.

'Ardea,' a new Ornithological Journal.

[Ardea. Tijdschrift der Nederlandsche Ornithologische Vereeniging. Vol. i. Parts 1 & 2. Leiden, 1912.]

We have been favoured with copies of the first two parts of a new ornithological journal, called by the not inappropriate name of 'Ardea,' and published by Brill of Leyden. It is the organ of the Netherlands Ornithological Union, and is under the editorship of Dr. de Beaufort, Mr. Van Pelt Lechner, and Dr. Van Oort. The language used is what we commonly and perversely in England call "Dutch," but is easily understood by those who can read German and English.

We need hardly say that we look upon the establishment of this journal with much satisfaction, as likely to extend the knowledge of our special subject, and we wish it every sort of success. Most of the articles in the present numbers deal with questions of local interest.

Austral Avian Record.

[The Austral Avian Record. A scientific journal devoted primarily to the study of the Australian Avifauna. Vol. i. nos. 1–5, 1912.]

This new ornithological journal has been recently issued in connexion with the Austral Avian Museum, Watford, Herts, by Mr. Gregory M. Mathews, who is not only editor but also the writer of the greater part of the contents of these five numbers, although it is not until the third number is reached that he claims the authorship of the matter in the first two.

The first number contains a review of the Australian Cuckoos, chiefly from a nomenclatural point of view, and the dates of issue of Lear's 'Parrots' and S. Müller's 'Verhandl.

Nat. Gesch. Land- en Volkenkunde.' The other numbers are chiefly occupied with additions and corrections to the author's 'Reference List to the Birds of Australia' (Nov. Zool. xviii. 1912, p. 171), and in these articles he adds several hundred more additional subspecies to the Australian avifauna.

We have already offered some critical remarks on Mr. Mathews' methods in systematic ornithology, and it may perhaps be mere iteration to repeat that we do not approve of them. The subspecies described may be quite worthy of subspecific differentiation, but what we maintain is, that in describing them some sort of evidence of this should be brought forward.

On page 34 of the present number a new Osprey is described as *Pandion haliaëtus melvillensis*; it is said to differ from *P. h. cristatus* in its whiter head and smaller size. This is all the information given—no measurements either of the typical or the new subspecies, nothing as to the number of specimens examined or compared, and, in fact, it would be quite impossible for any worker to confirm or reject Mr. Mathews' new subspecies without access to his type. This appears to us very hard on the Australian worker. In the last number of the 'Record' forty-seven new generic names are proposed for Australian birds. Our remarks on the subspecies apply almost equally to these generic names; the characters are in nearly all cases merely comparative, and in our opinion of no great value for generic differentiation. It appears to us that it would have been far better to have waited until it was possible to give the limits of the genera, and to indicate real diagnostic characters common to each species included therein.

Bird Notes.

[Bird Notes: the Journal of the Foreign Bird Club, vol. iii. nos. 9–12, Sept.–Dec. 1912.]

Most of the articles in 'Bird Notes' are directly concerned with aviculture, and are accounts of the experiences of the authors in breeding or rearing birds in captivity, but we notice an interesting article by Mr. E. Hopkinson, spread over all four numbers, on the 'Birds of the Gambia,' where the writer has been officially employed for a good many years. There is also a short article on the breeding of the Striated Coly in captivity, by Mr. A. C. Young, who believes that this is the first time in which it has been successfully attempted. The November number contains a frontispiece, a handsome coloured plate of *Urocissa occipitalis*, drawn from a living example in the Zoological Gardens by Mr. Goodchild.

Messager Ornithologique.

[Messager Ornithologique. Troisième année 1912, nos. 2–4, Moscow.]

This Russian Ornithological Journal, which has only been recently established, is under the editorship of Mr. G. J. Poliakow and appears four times a year. As the articles are entirely written in Russian, it is difficult to say much about the contents, but the titles of the various articles are translated, which enables one to see that most of the papers deal with Palæarctic birds. There is a long article on the "Ornithology of Turkestan," by Mr. N. A. Sarudny, in which new subspecies of *Urinator* and *Cerchneis* are described, and the same author collaborates with Mr. Bikewitsch in a discussion of the races of *Parus bokharensis*. Prof. Suschkin discusses some new facts in regard to the geographical distribution of birds in the Altai Mountains, and finally the editor, Mr. Poliakow, writes a long account, separately paged, of his visits to the lakes Saissan-nor and Marka-kul in western Siberia; this last is illustrated by a number of photographs of the country traversed. No student of Palæarctic birds can neglect to refer to this Journal.

Revue Française d'Ornithologie.

[Revue Française d'Ornithologie, Scientifique et Pratique. Two vols. Paris, 1910–1912.]

The establishment of a new Ornithological Journal in

France ought not to remain unnoticed in 'The Ibis,' and the first two volumes of it are now complete. They are edited by MM. L. Denise and A. Ménégaux. Among the more important papers are an essay on the Birds of Cuba and an article on a collection from Bolivia by M. Ménégaux, and a complete list of the Humming-birds of Ecuador by M. E. Simon. The last-named paper records the existence of 152 species of Trochilidæ in Ecuador, among which is one considered as new and described as *Prasites vitticeps*, while *Aphantochroa hyposticta* of Gould is made the type of a new genus (*Taphrospilus*).

Scottish Naturalist.

[The Scottish Naturalist, Sept.–Dec. 1912.]

The four numbers of the Scottish Naturalist do not contain any articles of very special ornithological interest. Mr. Eagle Clarke gives an account of a very remarkable wild-killed hybrid, whose parents seem to have been a Wild Duck and an Eider. It was shot, on the island of Auskerry in the Orkney group, by Mr. Laidlaw, and is illustrated by a photograph. In the October number Mr. R. Somerville gives some account of the first occurrence of the Little Owl (*Athene noctua*) in Scotland, where it was shot at East Grange in Fifeshire in November 1910. The bird is not a native of Great Britain, and may not improbably have been introduced. Mr. Landsborough Thomson continues his report on the Aberdeen bird-migration enquiry, giving a detailed list of all the ringed birds which have been recaptured and recorded.

Other Ornithological Publications received.

Arrigoni degli Oddi, E. Note sopra una raccolta di Uccelli dell' Arcipelago Toscano. Parts i. & ii. (Rivista Ital. Orn. 1911–12.)

Dabbene, R. Contribución á la Ornitologia del Paraguay. (Anales Mus. Nac. Hist. Nat. Buenos Aires, xxiii. 1912.)

Flower, S. S. Zoological Gardens of the World. (Reference List, Giza, Egypt, Jan. 1913.)

Grinnell, J. The functions of the A. O. U. Committee on Nomenclature. (Auk, xix. 1912.)

Grinnell, J. The outlook for conserving the Band-tailed Pigeon as a game-bird in California. (Condor, xv. 1913.)

Grinnell, J. A systematic list of the Birds of California. (Cooper Ornithological Club, 1912.)

North, A. J. Nests and Eggs of Birds found breeding in Australia and Tasmania. Vol. iii. pts. iv., v.; Vol. iv. pt. i. (Sydney, 1912-13.)

Oberholser, H. C. A revision of the forms of the Great Blue Heron (*Ardea herodias* Linnæus). (Proc. U. S. Nat. Mus. 43, 1912.)

Sassi, Dr. M. 'Eine neue Art des Genus *Cercococcyx*.' 'Liste von Vogelbälgen aus Mesopotamien.' 'Beitrag zur Ornis Zentralafrikas.' (Ann. Nat. Hofmus. Wien, 1912.)

Stone, W. The phylogenetic value of colour-characters in Birds. (Journ. Acad. Philad. xv. 1912.)

Sweet, C. D. A Study of epithelioma contagiosum of the Common Fowl. (Pub. Univ. Calif., Zool. vol. xi. No. 3, 1913.)

Trotter, S. The relation of genera to Faunal areas. (Auk, xix. 1912.)

Trotter, S. The faunal divisions of Eastern North America in relation to vegetation. (J. Acad. Nat. Sci. Philad. xv. 1912.)

Tschusi zu Schmidhoffen V., *Ritter v.* Ornithologische Literatur Österreich-Ungarns, Bosniens und der Herzegowina, 1911. (Verh. k.-k. zool.-bot. Ges. Wien, 1912.)

Aquila. (Tom. xix., Budapest, 1912.)

Austral Avian Record. (Vol. i. Nos. 6-8, London, 1913.)

Avicultural Magazine. (3rd Series, Vol. iii. Nos. 11, 12; Vol. iv. Nos. 4, 5, 1913.)

Bericht der Senckenbergischen Naturf. Gesellsch. (1912, Heft. 1-4. Frankfurt.)

Bird Notes. (New Series, Vol. iv. Nos. 1-3, 1913.)

British Birds. (Vol. vi. Nos. 9, 10, 1913.)

The Condor. (Vol. xv. No. 1, 1913.)

The Emu. (Vol. xii. pt. 3, 1913.)

Irish Naturalist. (Vol. xxii. Nos. 1-3, 1913.)

Journal für Ornithologie. (Vol. lxi. pt. 1, 1913.)

Memoirs of the Queensland Museum. (Vol. i., Brisbane, 1912.)

Ornithologisches Jahrbuch. (Bd. xxiii. Heft. 5, 6, 1912.)

The Scottish Naturalist. (Nos. 13, 14, 15, 1913.)

Verhandlungen des Naturwissenschaftlichen Vereins in Hamburg, 1911. (Hamburg, 1912.)

Zoologischer Anzeiger. (Bd. xli. Nr. 5-10.)

Zoological Society Bulletin, New York. (Vol. xvi. No. 55, 1913.)

XVIII.—*Letters, Extracts, and Notes.*

We have received the following letters addressed "to the Editor":—

Sir,—I have recently been reading the paper by Mr. David A. Bannerman on the birds of Gran Canaria which appeared in 'The Ibis' for October 1912. As there are several points which I would like to comment upon, I should be much obliged if you would grant me space to do so.

On pages 565–6 Mr. Bannerman wrote that after the account which I gave of the Charco (*vide* Orn. Jahrb. xxi. 1910, p. 82) he had expected to see several Coots and Moorhens, but that they were remarkably scarce and, continuing, writes "Certainly it is not possible now in this 'Charco' to come upon the pretty picture of bird-life which Herr von Thanner portrayed in his paper." I see that Mr. Bannerman does not understand what I meant to convey. I particularly mentioned that there were only a few or single pairs of these birds.

On page 586 Mr. Bannerman wrote of *Anas marmorata*, "They are occasionally shot at Maspalomas, where Herr von Thanner *procured* specimens." This is a mistake; I never wrote that I had actually killed this Duck, as the kind proprietor, Don Pedro Castillo, forbade me to do so. I am sorry to see that a member of Mr. Bannerman's party shot a specimen.

Referring to *Accipiter nisus, on page* 589, Mr. Bannerman did not meet with this bird in the island. Certainly, as he remarked, the Sparrow-Hawk is very rare, although during my last visit to the island in 1912 I found it breeding at the "Cueva de las Niñas," where I had previously noticed a single female during my first visit to this spot. This is the place where Mr. Bannerman camped in 1910 and 1911. Herr Polatzek mentions that he has killed a female of this species near San Maté › and found nests in some remote orchards (Orn. Jahrb. xix. 1908, pp. 101–102).

Page 599. Mr. Bannerman was unfortunate in not meeting with the Tenerifian Redbreast in the pine forests. I found this bird not uncommon in the Pinar and breeding in three or four places near the Cueva de las Niñas. In the north of the island they are also common in suitable spots.

Page 601. With regard to *Sylvia melanocephala*, I must repeat that this bird is common everywhere in the *south* of Gran Canaria; they were numerous above Maspalomas and between the Puerto and village of Mogan.

On page 603 the author remarks, "Herr von Thanner mentions (Orn. Jahrb. xxi. p. 95) that there are no Chiffchaffs in the Pinar." This is a wrong quotation, which Mr. Bannerman has been kind enough to inform me was due to this remark in my paper having been wrongly translated for him. I wrote: "there are hardly any." The only spots where this bird is plentiful are near the escobón (*Cytisus proliferus*), whence they may enter into the surrounding Pinar. Near the "Charco" I collected a number of Chiffchaffs with light plumage and yellow tail-feathers. I sent these birds to Professor Dr. A. Koenig and have received a communication on the subject from Dr. Le Roi, in which he says that this paleness is due to use alone and that they do not constitute a distinct subspecies.

Mr. Bannerman has attacked me for shooting seventy-six examples of *Fringilla teydea polatzeki* (pages 615–6). I have been told that this same gentleman offered the forest guards five pesetas apiece if they would procure for him some examples of this very bird; this surprised me not a little! The same incident has occurred with regard to Mr. Ogilvie-Grant over the Bullfinch of the Azores: Mr. Ogilvie-Grant gave his reasons for shooting specimens of this Bullfinch in the 'Novitates Zoologicæ,' vol. xii. 1905, p. 127. For these same reasons as were given by Mr. Ogilvie-Grant, I myself felt no compunction in securing such specimens as I met with. It may interest readers of 'The Ibis' to learn that Bolle already knew of the existence of a Blue Chaffinch in Gran Canaria. I have published a short notice relating to this fact (Orn. Jahrb. xxi. p. 225).

I must thank you for allowing me to take up so much of your valuable space.

I am, Sir,
Yours &c.,
RUDOLPH VON THANNER.

Casa inglisa, Vilaflor, Tenerife,
December 15th, 1912.

Sir,—Glancing through my copy of the 'Catalogue of the Collection of Birds' Eggs in the British Museum,' just received, I noticed that two eggs from the Tristram Collection, taken on "Grand Manan Is., Bay of Fundy," are described (on page 262) as those of *Passerculus princeps*. There would seem to be good reasons, however, for thinking that they must have been laid by *P. savanna*, for this is the only *Passerculus* known by American ornithologists to inhabit Grand Manan in summer, while *P. princeps* is unknown by them to breed anywhere save on Sable Island.

I am, Sir,
Yours &c.,
WILLIAM BREWSTER.

Cambridge, Massachusetts,
December 12th, 1912.

[The eggs in question, which came to the Museum from the Tristram collection, were labelled and presumably identified by Mr. T. M. Brewer, the well-known American ornithologist, and as Mr. Ridgway, in his recent work on the 'Birds of North and Middle America,' states that *Passerculus princeps* breeds on Sable Island and other islands off Nova Scotia, there seems to be no sufficient reason to alter or doubt the identification.—W. R. O.-G.]

Sir,—May we be allowed to make some brief remarks concerning Dr. P. L. Sclater's "Commentary on the new 'Hand-List of British Birds,'" which appeared in the last issue of 'The Ibis' (pp. 113–127)?

In the first place, Dr. Sclater does us the great injustice of misquoting what we wrote, and thus attributes to us a statement which we were never so ignorant as to have made. Dr. Sclater writes (p. 114): "it is even stated that the nomenclature of Birds has been 'neglected for more than 150 years, although a requisite of the greatest importance,'" and further elaborates this misquotation by stating on p. 116 "it is not correct to say that the study of Zoological Nomenclature has been neglected during the past 150 years." We never said anything of the kind. What we wrote was ('Hand-List,' p. vi): "After all, what is nomenclature? It is little more than a system of labelling, and yet we have neglected for more than 150 years one of the requisites of greatest importance—*that our labels should everywhere be the same for the same bird*" (italics are ours).

As Dr. Sclater has not only misquoted the words used, but has also entirely misinterpreted their meaning, it is perhaps necessary to point out that we likened nomenclature to a *system of labelling*, and stated that we had neglected the most important requisite of this system, viz., that our *labels* (or names) for the same bird should be everywhere *uniform*. We then proceeded to show how this want of uniformity had arisen and how it had continued for want of the "*adoption of a uniform system* of nomenclature." The whole of our Introduction is obviously a plea for the *universal* adoption of one system in order to secure uniformity, and we uphold the "International Rules of Zoological Nomenclature" as the only code which has *international authority*. *We do not go into history of this or any other code*, and whether we should have done so or not is a matter upon which we as authors and Dr. Sclater as critic may well hold diverse views. But Dr. Sclater's assumption, that because we did not mention Strickland's Code—perhaps the best-known one—we were therefore ignorant of it, is quite unfounded.

With regard to the criticism on page 118, we have given an unnumbered binominal name as a general heading to each species or group of subspecies, and when a species is only represented by one form the binominal name is repeated immediately below and numbered, and the authority affixed, *e. g.* 12. *Pyrrhocorax pyrrhocorax* (L.); when it is represented by two or more forms, each is given with a number and authority below the binominal heading.

If Dr. Sclater will read the account of the "Distribution Abroad" of the Honey-Buzzard, he will see that there is some sense in calling it *Pernis apivorus apivorus*. Dr. Sclater is displeased with our adding the author's name to trinominals, and says that it is not correct to do so, because in many cases the original authors did not use trinominals. This criticism is quite unfounded, because the author's name does not refer to the combination, but to the last name only. This is in accordance with the International Rules and every other Code of Nomenclature. We may also be allowed to call attention to the numerous misquotations in the "Comparison of the Names of British Birds according to the List of the British Ornithologists' Union (1883) with the Names corresponding to them in the 'Hand-List' (1912)." To quote a few examples:—

Dr. Sclater says we have replaced the name of *Turdus atrigularis* by *Turdus ruficollis*! This is not correct, as we have called the bird *Turdus ruficollis atrogularis*. The trinominal is due to our regarding it as a geographical form of *T. ruficollis*, a fact which every ornithologist understands. We have not replaced *Sitta cæsia* by *Sitta europæa*, but we call the Central European form *S. europæa cæsia*, the *British* race *S. europæa britannica*, because both are obviously forms of *S. europæa europæa*. We have not replaced *Pyrrhula europæa* by *Pyrrhula pyrrhula*, etc., etc. Dr. Sclater further exaggerates the differences in the two lists by counting a change of genus as a change of name, e. g. *Anas crecca* for

Querquedula crecca, and because we do not recognize *Cygnus immutabilis* as a distinct species he counts this also as a change of name!

From what is said at the bottom of page 116 and the top of p. 117 it might be inferred—and, indeed, no doubt will be by the ignorant—that we have had in England up to the advent of our 'Hand-List' a uniform "set of scientific names for our birds based on the Stricklandian Code." That this is not so is, of course, notorious. We have given a few examples in our Introduction to show that even the authors of the B. O. U. List departed in their own separate works from that List! Need we labour the point further? And, are we ever to remain so insular as to imagine that British Ornithologists are the only ornithologists in the world, and that the nomenclature of British birds concerns us alone?

Finally, as the Stricklandian Code has *not* been adopted by any International body of Zoologists, is it worth while for a small group to continue to uphold it and thus delay the advent of the uniformity which Dr. Sclater himself desires? What does it matter to science if "journalists" and "occasional writers" "recognize their old favourites disguised under their new names" or not? How many of them now recognize their old favourites disguised under their many old *Latin* names? What is our convenience compared with the progress of science? And, to argue the matter from the narrowest and most selfish point of view: Is the convenience of the individual best served by a uniform system, even if that involves some change in the names to which he is accustomed, or by a number of systems or no systems, both of which alternatives involve the use of a number of different names for the same species?

As members of the B. O. U. we are proud of its past glories and the notable achievements of its life-long Editor, but we claim to share in the spirit of progress which inspired Strickland, and are confident that the world-wide advance of our science cannot be permanently hindered by individual prejudice or reactionary pleas.

Ernst Hartert.
F. C. R. Jourdain.
N. F. Ticehurst.
H. F. Witherby.

February 24th, 1913.

Sir,—I have just received the January number of 'The Ibis,' and I lose no time in telling you how pleased I have been in reading Mr. P. L. Sclater's paper on Zoological nomenclature. I fully agree with him in every respect. Last summer I received from a German Society an invitation to subscribe to a protest against the law of priority. I refused to do it, or, more exactly, I did not answer it. More recently I have received from Dr. Hartert a second invitation to strictly adhere to that law. I told him that I admit the law of priority, but *cum grano salis,* and beginning with the twelfth edition of Linnæus. The acceptance of the tenth edition has been the excuse of the actual confusion. For my part I shall stick to the twelfth edition to the end.

Perhaps it would be possible to draw up a list of names of those who follow the Stricklandian code, in opposition to those of the new school.

I am, Sir,
Yours &c.,
T. Salvadori.

Turin,
January 25th, 1913.

Sir,—I have read with much interest Dr. Sclater's commentary on the new 'Hand-List of British Birds,' as his claim for the Stricklandian Code is important at the present time.

I have been called an ultra-prioritarian, and it should be remembered that Strickland was the father of the Law of Priority, and by his own writings would now be considered an ultra-prioritarian. He maintained that "the stern Law of Priority" *must* be obeyed, whatever the consequences. Neither Strickland nor the Stricklandian Code can be blamed for the present state of confusion, but rather the so-called followers, who never read or recognized the Code save when it suited their convenience. This was pointed out by one of its opponents, who gibed that it "was more honoured in the breach than in the observance."

The only differences between the Stricklandian Code and the International Rules are in minor points, wherein agreement has now been arrived at even by the "select committee" of the British Ornithologists' Union. I refer to the acceptance of the tenth edition of the 'Systema Naturæ' of Linné in place of the twelfth edition accepted in the Stricklandian Code, and the recognition of "toutonyms." Whether the former change was advisable may be still a moot point, but it has now become universally recognized, so that no further argument is necessary.

Dr. Sclater's plea for "journalists, local list-makers, and other occasional writers" against the wishes of the "working ornithologists," who will "soon get used to it," can scarcely be considered worthy of criticism, as surely scientific work must not be retarded on account of the whim of a journalist or local list-maker. I would, therefore, conclude that, seriously speaking, little fault has been found with the "New Hand-List" by Dr. Sclater, but rather that his Commentary is simply a review of it from the view-point of one of the older workers. When it is remembered that the comparison is with a List published *thirty* years ago, and which was in general disuse ten years afterwards, the extraordinary number of changes bears a very large discount.

Regarding the addition of the author of a species, I agree with Dr. Sclater that it seems unnecessary when the original reference is also given, but otherwise it should always be quoted. My own criticism of the Hand-List would have been directed against the very wide limits of the genera used, the lack of generic references, and the general classification followed. The authors would have furthered "uniformity" by generally adopting the evolutionary order provided by Sharpe in the 'Hand-list of Birds.'

These points I would like to see remedied by the select committee at present at work on the new B. O. U. List.

"Unless the Law of Priority is strictly applied no uniformity in International Zoological Nomenclature can obtain."

I am, Sir,
Yours, &c.,
GREGORY M. MATHEWS.

Langley Mount, Watford, Herts.
February 4th, 1913.

The Second Freiburg Moluccan Expedition.—We have received from Mr. E. Stresemann the following account of his expedition to the Dutch Indies, which will, we hope, interest our readers. Mr. Stresemann, who is now at Tring working out his collection of birds, writes as follows:—

The second Freiburg Moluccan expedition, organized at the expense of those who participated in it, was led by Dr. Deninger, a geologist and a "Privatdocent" of the University of Freiburg. He was accompanied by Dr. Tauern, also of Freiburg, as physicist, and by Mr. E. Stresemann, of Munich, as zoologist. The object of the expedition was the exploration of the southern Molucca Islands, and especially Ceram and Buru.

A specially constructed motor-boat was taken with them, with which they hoped to reach more easily some of the less accessible islands, such as Kalao-tua, Mysol, and the Sula archipelago. Unfortunately, the boat was wrecked in the roads of Buleleng, off Bali. This, though it delayed the expedition, enabled it to make an unanticipated visit to the mountains of Perak in the Malay Peninsula, where the months of September to November, 1910, were spent.

The visit to the island of Bali lasted three months, and there very valuable zoological and ethnographical collections were made. Thence they made their way to Ceram, where they stayed eight months, exploring the high mountains of the interior, never previously visited by travellers or collectors. Here very interesting zoological and botanical collections were made, particularly on Gunung Pinaia, the highest mountain of the island, which attains an elevation of 8300 ft. Subsequently, Dr. Tauern spent two months on Mysol, while Dr. Deninger and Mr. Stresemann worked on Buru. Here, too, where the interior is quite unexplored, the island was crossed twice from sea to sea, and the highest mountain, Gunung Fogha, which reaches an elevation of 6200 ft., was ascended. In April, 1912, the expedition returned home with a rich booty of observations and collections. The number of bird-skins brought back was upwards of 1200. A full report of the results of the expedition will shortly be issued.

The Alexandra Parrakeet (Polytelis alexandræ).—In his interesting narrative of his journey 'Across Australia,' Prof. Baldwin Spencer gives the following account of his interview with this beautiful bird in the central wilderness.

"Amongst the birds the most interesting one to be found in the central area is the Princess Alexandra Parrakeet. This was originally described by Gould in 1863, having been discovered by Waterhouse during Stuart's third expedition in 1861, when he succeeded in crossing the continent from south to north. It is the most beautiful and delicately coloured, as it is the rarest, of our Parrakeets. It belongs to a small group characterised by the length and narrowness of the tail-feathers, which add to their graceful appearance, as compared with other Parrakeets. The natives call it 'Milturung,' which means 'long tail.' A fully-grown bird has a total length of seventeen inches, of which the tail forms more than eleven. Delicate shades of rosy and coral-pink, moss-green, cobalt-blue with darker shades of brown and blue, blend together in such a way as to render the bird much less garish in its colour than most of our Parrakeets. At the time of the Horn expedition it was only met with once, far away in the western Macdonnells, when Mr. Keartland, the ornithologist of the party, most fortunately came across a flock of about fifteen perched in a small clump of 'desert oak.' This was in June 1894; in November of the same year they made their appearance in the eastern Macdonnells, nesting in hollow limbs of gum-trees, each nest containing five white eggs. Then for years they seemed to disappear, until, once more, they were recorded during the year 1905 from as far south as Oodnadatta. They feed on grass-seeds, more especially those of the porcupine-grass, which indicates that they normally inhabit dry and sterile country such as is avoided, as far as possible, by man. They certainly have a most remarkable habit of never appearing in the same part of the country during two successive years; in fact, when they do come, they make their appearance suddenly and disappear as suddenly and mysteriously, but whence they come and whither they go no one knows."

There are now two specimens of the Alexandra Parrakeet in the British Museum, obtained during the Horn expedition into Central Australia, and others living in the Zoological Society's Parrot-house.

The Pennant Collection.—The Earl and Countess of Denbigh have recently presented to the National Museum the collection of birds formed by Thomas Pennant, which has remained at Downing Hall in Flintshire in its original state since his death in 1798. The collection includes 142 specimens, the greater number of which are figured in his folio work on 'British Zoology' published in 1766.

Although there are no type specimens, the birds are of great historic value, and, in several instances, may assist in the solution of questions which have hitherto not been determined or have given rise to much controversy. For instance, we may mention that the "Ringtail" proves to be a female of the Common Hen-Harrier (*Circus cyaneus*).

Another interesting pair of birds are the male and female Capercaillie, which, if their origin can be shewn to be Scottish, will prove of great value. At the present time no true British-killed example of the Capercaillie is known to exist in any Museum. This bird became extinct in England many years ago; but in Scotland and Ireland it lingered on till the latter part of the eighteenth century, and in Pennant's folio edition it is mentioned as being then "not frequent." The present Capercaillie of Scotland is of Scandinavian origin, and was introduced in 1837 by the then Marquess of Breadalbane at Taymouth Castle.

The specimens have been dismounted from their original cases and carefully labelled, and are to be kept together, so that they can be easily referred to.

The Birds of Sinai.—In the last volume of the 'Journal für Ornithologie'* is an article on the birds of the Sinaitic Peninsula, which will attract many of our readers, as the locality is one of special interest and is still imperfectly explored. After preliminary remarks and a useful list of the previous publications relating to the subject, Graf Zedlitz gives us a list of the 104 species of which he obtained specimens, or which have been positively identified as occurring in Sinai by previous authorities. Two of these are described as new subspecies, *Ammomanes deserti katharinæ* and *Columba livia palastinæ*.

Numerous field-notes and systematic remarks are given on every species.

The Museum at Brighton.—We learn from 'The Times' that a collection of nearly 1000 bird-skins, the property of Mr. M. J. Nicoll, is to be purchased for the Brighton Public

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* J. f. O. 1912, pp 325 and 528.

Museum. Nearly all the specimens were obtained in Sussex. They are said to include a Black-eared Chat (*Saxicola stapazina*), the first British specimen obtained, and a Baird's Sandpiper (*Tringa bairdi*), the first European specimen obtained, besides examples of many other rare species.

A "ringed" Swallow taken in Natal.—'British Birds' for February reports that an adult Swallow which was ringed by Mr. J. R. B. Masefield at Rosehill, Cheadle, Staffordshire, on 6 May, 1911, was caught in the farmhouse of the farm Roodesand, 18 miles from Utrecht, Natal, by Mr. J. Meyer on 23 December, 1912.

This is the first occasion on which European-bred Swallows have been definitely proved to migrate to South Africa, and is the more remarkable as it has generally been supposed that our British-bred Swallows travelled down the west coast of Africa, and it could hardly be expected that they would spread so far to the east as Natal.

The B. O. U. second New Guinea Expedition.—At the last meeting of the B. O. C. on March 19 it was announced that news had been received by cable that Mr. Wollaston, in company with a Dutch Officer, had reached the summit of Carstensz Peak, about 16,000 ft., at the end of January. Further particulars are expected as the news came through Dutch sources and not direct from Dr. Wollaston.

The Annual Meeting of the B. O. U.—Members are reminded that the Annual General Meeting of the Union will be held at the offices of the Zoological Society in Regent's Park at 4.30 P.M. on Wednesday, April 9th. The Meeting will be an important one, as a new President and a Secretary have to be elected, and it is therefore hoped that there will be a good muster of Members.

Proposers of new Members should either attend themselves to speak on behalf of their candidates or send a letter of recommendation to the Secretary.

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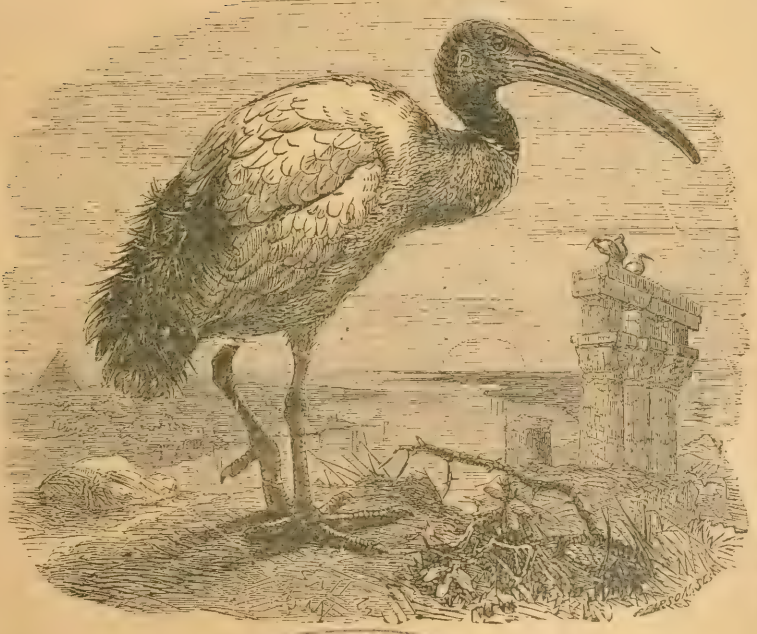

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E. C. STUART BAKER.
Secretary.

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July, 1913.

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Dr. P. L. SCLATER, F.R.S.

The Committee greatly regret to have to announce the death of Dr. P. L. Sclater, which occurred on Friday, June 27th, 1913. A Memoir will appear in the October number of "The Ibis."

THE IBIS.

TENTH SERIES.

No. III. JULY 1913.

XIX.—*On a small Collection of Birds from Henderson Island, South Pacific.* By W. R. Ogilvie-Grant.

(Plate IX.)

A short account of the birds collected on Henderson Island and presented to the British Museum by Messrs. D. R. Tait and J. R. Jamieson, was published in the 'Bulletin of the British Ornithologists' Club,' xxxi. pp. 58–61 (1913).

Under the direction of Sir John Murray an expedition in search of lime-deposits visited Henderson Island in 1912, and though unsuccessful in their principal object, the members met with several interesting birds, of which four are peculiar to the island.

When describing these birds I unfortunately overlooked the fact that a short paper on the avifauna of that island had already been published by Mr. A. J. North in the 'Records of the Australian Museum,' vii. pp. 29–31 (1908). Mr. A. E. Stephen visited the island in 1907 and collected six birds, which were preserved in spirits and forwarded to the Australian Museum; these included two, out of the three species which I described as new. The cause of this oversight has already been explained in the 'Bulletin' (*t. c.* pp. 76–77), and I have to thank Dr. Charles W. Richmond, of the United States National Museum, Washington, for calling my attention to Mr. North's paper.

Henderson or Elizabeth Island, one of the most southern and easterly islands of the Southern Pacific, lies about 120 miles to the north-east of Pitcairn, at about 128° W. Long. and 22° S. Lat.

The account given by the members of the expedition which recently visited it differs somewhat from that published by the Rev. T. B. Murray and quoted in my paper in the 'Bulletin.' No trace of volcanic rock was found, and the island is said to be an upraised atoll, rising about eighty feet above the sea. Phosphate rocks are found, but not in sufficient quantity to pay the cost of working. There is a slight depression on the top apparently representing the lagoon of the atoll, which seems to have been upraised in comparatively recent geological times.

The general account of Henderson Island by Mr. Stephen published by Mr. A. J. North, is so much better than any other that I have taken the liberty of quoting it:—

"Henderson Island is an elevated coral islet about six miles long and three miles broad, rising fifty feet above sea-level. The tableland is flat and roughly strewn with dead coral-fragments and pointed or knife-edged weathered compact coralline limestone. The vegetation is dense scrub, with vines and ferns. *Pandanus* trees were about the highest on the island, some being quite thirty feet high. The soil is very scanty, and the vegetation is often thickest in slight depression-areas, where soil is more abundant. No water or swampy places were found, drinking-water having to be taken on the various excursions. The island is uninhabited, and has rarely been visited by vessels, but the Pitcairn islanders occasionally visit it for fishing purposes, since fish are very plentiful there. There are two cocoanut trees on the beach on the north end of the island, planted many years ago by some of the Pitcairn islanders.

". . . . Animal life noticed during the short stay was as follows:—One variety of rat, very similar to the Pacific type; one skink (very plentiful); one small butterfly; one paroquet (not very plentiful—only seen on the high part of the island, and generally in pairs); one black crake (fairly plentiful in the interior of the island, which probably lives on tiny land-molluscs, which abound in the scanty soil over the high land) ; one dove, pink-crested, found more or less in flocks of about twenty or more. 'Mutton birds' (*Puffinus* sp.?) were very plentiful, and laid their eggs on the ground among the scrub in more or less secluded places all over the island ; white terns were also plentiful ; noddies were not so plentiful ; frigate-birds were numerous ; one species of small brown bird with white tail-feathers, similar to one at Pitcairn."

The last-named species was evidently the Sedge-Warbler described below.

ACROCEPHALUS TAITI.

Acrocephalus taiti Ogilvie-Grant, Bull. B. O. C. xxxi. p. 58 (1913).

Adult male and female. General colour above earth-brown, the greater wing-coverts with pale edges and the four outer tail-feathers tipped with white in decreasing proportions from the third outwards to the sixth pair ; lores, eyebrow-stripes, and underparts white tinged with buff ; thighs dusky ; under wing-coverts and bend of the wing washed with pale fawn-colour. Iris brown in the male, red in the female ; bill grey ; feet slate-grey.

Adult male. Total length about 180 mm. ; culmen from feathers on forehead 16·5 ; wing 84 ; tail 77 ; tarsus 32.

Adult female. Total length about 177 mm. ; culmen from feathers on forehead 15·5 ; wing 79 ; tail 74 ; tarsus 29.

Another male has a large portion of the plumage showing that curious tendency to albinism which is so often to be found in the allied *A. vaughani* Sharpe, from Pitcairn Island. This individual has the head mostly white, with the exception of a few dark feathers on the forehead and occiput ; the feathers of the upperparts and wing-coverts are a mixture of brown and white, many of the brown feathers being tipped with whitish, producing a mottled appearance ; primary-quills mostly dark brown, one or two of the middle and inner ones being tipped with white ;

secondary quills largely white on the left wing, less so on the right; tail mostly white, some of the middle feathers only being partially brown; underparts, including the sides of the head, chin, and throat, white. Iris brown; bill grey; feet slate-grey.

Types in the British Museum: ♂ ♀. Nos. 9 & 9 A. Henderson Island, S. Pacific, 27–29. x. 12. D. R. Tait coll.

This species differs from *A. vaughani* in having the feathers of the head uniform brown, not edged with yellowish-white, which gives the crown of that species a somewhat scaled appearance.

The amount of white in the plumage of Acrocephaline birds from the Pitcairn and other Pacific Islands appears to vary greatly in different individuals, and is generally unevenly developed on the two sides of the body. It would seem as though this tendency to albinism might be due to degeneration caused by inbreeding.

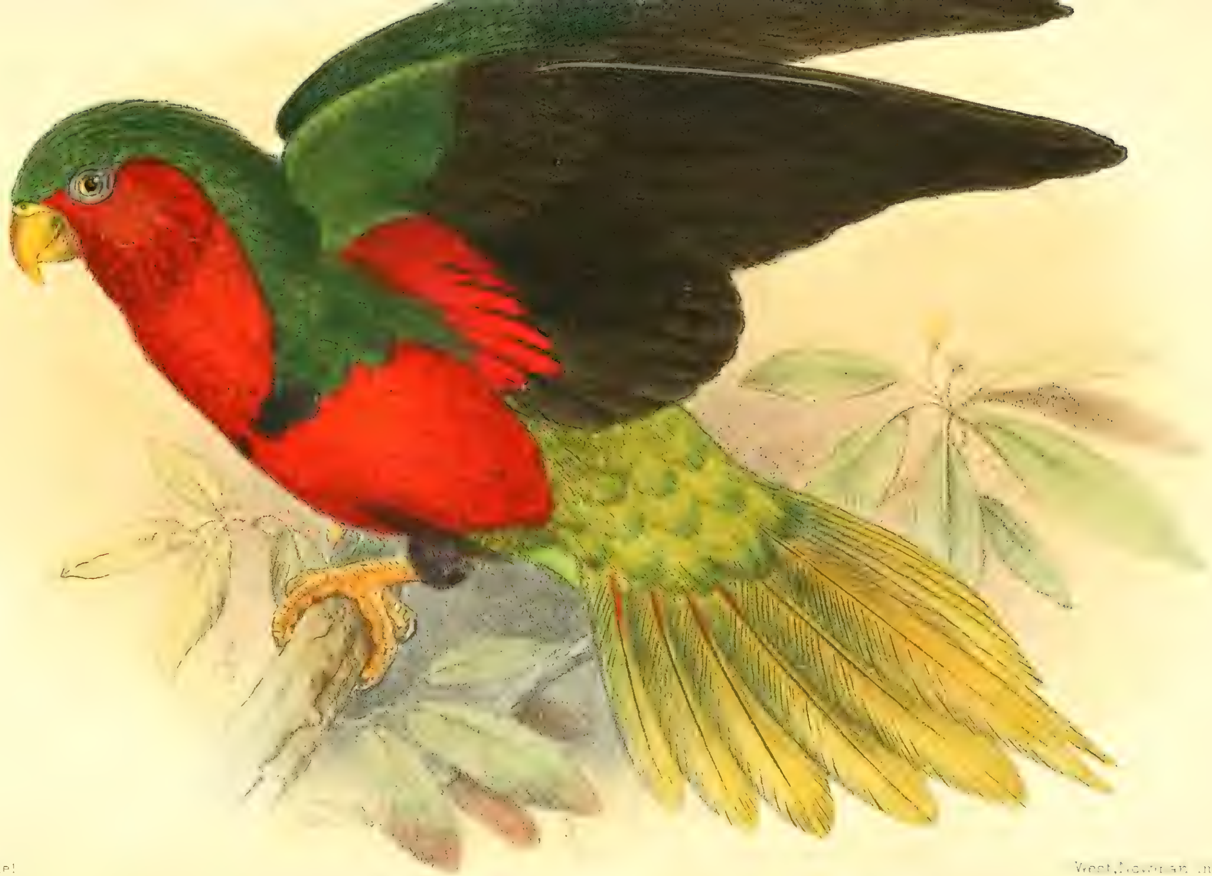
By many ornithologists the Reed-Warblers of the Pacific Islands are placed in a distinct genus *Tatare*, but there does not seem to be any good reason for separating them from their Western allies.

VINI STEPHENI (North). (Plate IX.)

Calliptilus (?) *stepheni* North, Records Austr. Mus. vii. p. 29 (1908).

Vini hendersoni Ogilvie-Grant, Bull. B. O. C. xxxi. p. 60 (1913).

Adult male and female. Appear to be most nearly allied to *Vini kuhli* (Vigors) from the Fanning Islands, but differ in many important particulars. The feathers of the occiput are dark green with brighter green shaft-streaks, like those of the crown, instead of deep purple; the tail-feathers have the terminal portion yellow tinged with greenish, and the basal portion mottled with dark green on the outer web and with scarlet and black, or scarlet, on the inner web, while in *V. kuhli* they are very differently coloured. The green of the neck extends on to the sides of the chest, and there



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West, Newman imp.

VINI STEPHENI

is an indistinct dark purple band across the upper breast, which is wanting in the bird from the Fanning Islands. The tail is rather more wedge-shaped than in *V. kuhli*, the middle pair of tail-feathers being proportionately somewhat longer. Iris yellow; bill dark yellow; feet and legs yellowish-brown. Total length about 200 mm.; wing 125; tail 90.

The genus *Vini* has been characterized by Salvadori (*cf.* Cat. Birds B. M. xx. p. 11, and Wytsman's 'Genera Avium,' Psittaci, family Loriidæ, p. 2) as having the first three or four primaries notched at the tip; but this character is only found in a marked degree in *V. australis*, from Samoa and the Friendly Islands, while in *V. kuhli*, the type of the genus, it is much less apparent, as is also the case in the present species from Henderson Island. This character appears to be of specific rather than of generic value.

It seems pretty certain that the true home of *V. kuhli* is the Society Group in the Islands of Tahiti, Bora-Bora, &c., where it is probably now extinct, and that it must have been imported subsequently to the Fanning Group. The occurrence of the present species in Henderson Island strengthens this view, and the geographical range of the genus *Vini* would thus extend from Samoa and the Friendly Islands, where *V. australis* occurs, to Henderson Island. The Fanning Islands lie far to the north and are distant from Samoa about 1500 miles, and from Henderson Island about 3000 miles.

PORZANA ATRA North.

Porzana atra North, Records Austr. Mus. vii. p. 31 (1908).

Porzana murrayi Ogilvie-Grant, Bull. B. O. C. xxxi. p. 61 (1913).

Adult. Perhaps most nearly allied to the widely distributed *P. tabuensis* (Gmel.), but the entire plumage is deep black, with a slight greyish gloss. Iris red; bill black; feet orange. Total length about 180 mm.;

culmen 22; wing 80: tail 39; tarsus 36: middle toe and claw 41.

This species is obviously non-migratory, as is evidenced by its comparatively short feeble wings, which are much shorter than in *P. tabuensis*. In general appearance the species recalls *Limnocorax niger* (Gmel.), which is widely distributed over Africa, but the latter is of a rather greyer black and has the bill dull green.

The young in first plumage is rather greyer on the throat and underparts than the adult, and has the legs black. Wing 76 mm.

The nestling is covered with deep velvety-black down.

The occurrence of this Rail in an island devoid of permanent water is of interest. It inhabits the thick scrub and is said to be very tame.

PTILOPUS INSULARIS North.

Ptilopus insularis North, Records Austr. Mus. vii. p. 30 (1908).

Ptilopus coralensis Ogilvie-Grant (nec Peale), Bull B.O.C. xxxi. p. 61 (1913).

Mr. North has described the Fruit-Pigeon from Henderson Island under the above name, and, as he very correctly points out, it differs from *P. coralensis* Peale from the Paumotu group in having the feathers of the crown deep rose-pink (instead of purplish-pink), the same colour extending to the base of the bill: the chin and middle of the throat, as well as the vent, white; and the tail longer.

Since I published my notes on the Henderson Island Birds in the 'Bulletin' referred to above, Dr. Richmond has very kindly forwarded to me for examination four examples of the true *P. coralensis* Peale. They were collected by C. H. Townsend at Makatea, Niau, and Fakarava, all islands lying round Carlsoff Island in the Paumotu Group, where the type of *P. coralensis* was obtained. The only example of that species in the British Museum is the type of *Ptilopus chalcurus* Gray, an immature bird said to have come from Hervey Island, as is mentioned below.

To the differences between *P. insularis* and *P. coralensis* given by Mr. North, I may now add that the two males from Henderson Island are altogether larger and more heavily built than the birds from the Paumotu Islands. The bill is much stouter and deeper, measuring 5·5 mm. from the rhamphothæca to the angle of the mandible, as compared with 4·5 mm.; the wing longer, 145–147 mm. (144 mm. =5·7 inches in the type specimen recorded by Mr. North), as compared with 134–136 mm., and the tail 110 mm., as compared with 87–89 mm. A female of *P. coralensis* forwarded by Dr. Richmond is somewhat smaller than the three males recorded above, and measures, wing 129 mm., tail 86·5 mm.

The type specimen of *P. chalcurus* G. R. Gray was founded on a younger example in first adult plumage with the first primary-quill less attenuated towards the extremity than in the fully adult. Younger birds of this group of Fruit-Pigeons may always be recognised by this character.

Count Salvadori (Cat. Birds B. M. xxi. p. 104) rightly regarded the type of *P. chalcurus* as synonymous with *P. coralensis* Peale, but described the *type* of the latter species sent him for examination by the Smithsonian Institution as a distinct species under the name *P. smithsonianus* (*l. c.* p. 105). Dr. C. W. Richmond, however, assures me that in hunting down the records of their types, he discovered that the bird sent to Count Salvadori as the type of *P. coralensis* and described by him as *P. smithsonianus*, was without doubt the type specimen of the former, and was obtained on Carlsoff Island, though that information was not shewn on the label when Count Salvadori examined it. *P. smithsonianus* is therefore a pure synonym of *P. coralensis*.

I have little doubt that the type of *P. chalcurus* was not obtained at the Hervey or Cook Islands, for, as Wiglesworth pointed out ('Ibis,' 1891, p. 574), Garrett spent six months in that group and did not obtain specimens.

In the type of *P. chalcurus* the colour on the forehead (now faded to purple-violet, the specimen having been mounted in 1855 and exhibited for many years) extends *right to the culmen*, and though Count Salvadori says there are a few greenish feathers at the base of the bill, a careful examination fails to reveal anything of the sort, all being glossy violet, though somewhat faded. The true locality of the type of *P. chalcurus* must remain uncertain, but there can be no doubt that the birds from the Paumotu Islands are of the same species.

The figure of the type-specimen of *P. coralensis* drawn by Peale shows a bird with the crimson confined to the middle of the crown, the forehead as well as the superciliary region being grey. It is similar to an immature male from Niau forwarded by Dr. Richmond, and I think, as Cassin has already suggested, that the type must be an immature specimen. Against this it must be remembered that Count Salvadori, who has examined the type-specimen, believes that this surmise is not correct, "as the bird has the first primary much attenuated at the tip, more so even than in the type of *P. chalcurus*," which he takes to be the same as *P. coralensis* (*cf.* Cat. Birds B. M. xxi. p. 105, footnote). The synonymy of *P. coralensis* should therefore stand as follows:—

Ptilonopus coralensis Peale, Zoology U.S. Expl. Exped. p. 190, pl. 51 (1848); Cassin, U.S. Expl. Exped. 2nd ed. p. 272, pl. 32 (1858).

Ptilonopus chalcurus G. R. Gray, Cat. Birds Trop. Isl. p. 37 (1859) (Cook or Hervey Islands).

Ptilopus coralensis Salvad. Cat. Birds B. M. xxi. p. 104 (1893).

Ptilopus smithsonianus Salvad. *t. c.* p. 105 (Carlsoff I., Paumotu Group).

In addition to the above, the following species were also obtained at Henderson Island:—

Sula piscator Linn.
Procelsterna cærulea (Bennett).
Anous leucocapillus (Gould).
Gygis candida (Gmel.).
Totanus incanus (Gmel.).
Calidris arenaria (Linn.).

XX.—*The Birds of Hong Kong, Macao, and the West River or Si Kiang in South-eastern China, with special reference to their Nidification and Seasonal Movements.*—Part III.* (Conclusion and Appendix.)

By Lieutenant R. E. Vaughan, R.N., M.B.O.U., and Staff-Surgeon K. H. Jones, M.B., R.N., F.Z.S., M.B.O.U.

[Continued from p. 201.]

Turtur orientalis.

The Eastern Turtle Dove is a fairly common winter visitor to the coast of Kwang Tung and is not found further inland than the Shiu Hing gorge, about one hundred and ten miles from the sea. The time of arrival of these Doves appears to vary considerably in different years, for they have been known to occur as early as October 14, and as late as December 6; whilst in the spring, although the majority leave in March, they have been obtained on April 14.

Turtur humilis.

The Red Dove is a common resident species on the West River, but is only found on the coast and in the Delta country in winter, probably in the last named cases it is as a bird of passage from further north. On September 1 large flocks of these birds were found feeding in wet paddy with the Snipe, so probably they had migrated with the latter from the north. Further west, this species grows commoner than *Turtur chinensis,* and at Kwei Hsien it is the most abundant Dove.

It usually places its little nest, consisting of a few sticks and rootlets, high up in some tall tree, a banyan, bombax, or fir; and in the banyan the nest is very difficult to see, but the sitting-bird can easily be flushed. In this species it was found, from actual observation, that the male incubates the eggs from 10 A.M. till 4 P.M., and the female for the remaining eighteen hours. The different plumage of the two sexes enabled these observations to be made.

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* For previous parts see pp. 17–76 and 163–201, and for map see pl. iv.

Not infrequently the nest is placed in the same tree as that of *Turtur chinensis*, and on one occasion five nests of *Turtur humilis* were found in one tree. It has been met with also in heronries occupied by the Night and Pond-Herons. The usual number of eggs is two, but on July 11 a nest containing three was discovered by Staff-Surgeon C. E. Cortis Stanford, R.N. The eggs have a creamy tint, and are markedly smaller than those of *Turtur chinensis*. They average 1·02 × ·82, and vary in length from 1·10 to ·97, and in width from ·84 to ·77.

TURTUR CHINENSIS.

This Turtle Dove is a very common resident, and at Hong Kong it is exceedingly tame, feeding close to the houses and flying about the town and gardens. Early in the spring the male may be seen performing his love flights, which he does by ascending, perhaps one or two hundred feet, and coming down with wings and tail stiffly extended: a very pretty aerial evolution.

During the breeding-season two cocks not infrequently engage in battle, pecking viciously at each other and striking hard blows with their wings. This bird has also been seen to attack that robber, the Chinese Blue Magpie (*Urocissa*), when the latter has approached its nest and eggs; and the Dove has been known to strike the Pie severe blows in mid-air with its powerful wings, so that the thief was glad to escape.

There is little doubt that one sex relieves the other during incubation, but as they are alike it is not possible to say precisely when this occurs.

On March 17 a bird of this species being flushed from its eggs pretended to fall to the ground, and there shammed being wounded; this was the only occasion when such an action was observed. There is no doubt that this Dove lays its eggs throughout the year, for they have been taken in all the months except January, and young were obtained which must have been hatched in that month.

At the Marble Rocks, Shiu Hing, twenty miles above Samshui, this bird has become a cliff-breeder, and places its nest on grassy ledges in the rocks. It is frequently placed in a banyan or a fir tree, and when in the former, being the usual slight platform of sticks characteristic of the genus, is very difficult to see.

Eggs average 1·15 × ·88, and vary in length from 1·27 to 1·05, and in width from ·93 to ·84.

FRANCOLINUS CHINENSIS.

The Chinese Francolin is an exceedingly common bird all along the West River, and in Hong Kong and Macao, but the Delta country is not suited to it. Its weird resounding cry once heard can never be forgotten, and is one of the most characteristic sounds of the Chinese country-side. Although it calls more persistently during the spring and summer than at other times, it may be heard during every month of the year, one cock answering the challenge of another, until the whole mountain-side seems to be full of them.

It is known to European sportsmen as the "Partridge," and is difficult to shoot, for it runs fast, and is hard to put up without dogs, whilst if it is walked up by accident, it usually rises so suddenly that it is often missed altogether. The flight is swift and straight like that of a Quail. The birds are captured in plenty by the Chinese, and may often be seen for sale, alive, in small bamboo cages, for thirty cents (7*d.*) each.

The "modus operandi" is to get a female Francolin and put it tethered by one leg into a bamboo trap-cage ; this is placed on the hill-side, and the cock, attracted by the hen, enters her prison, the trapdoor falls, and the would-be lover is a prisoner. A number of these traps are set on the hill-side, and are visited twice a day by their owner.

There is little doubt but that this species is double-brooded, for birds may be seen chasing one another on the dry paddy-fields in mid-April, while a reliable Portuguese friend had seen young birds hardly able to fly in September and December.

The only eggs obtained of this species were got by Staff-Surgeon J. H. P. Greenhalgh, R.N., from a woman grass-cutter at Howlik. Nesting as it does on the ground, the eggs are only found by the grass-cutters, who probably eat them on the rare occasions when they make a find.

COTURNIX COTURNIX.

Quails occur during the spring and autumn migrations on the West River and on the coast, but their numbers vary to a remarkable extent; in some years hardly a bird is to be seen, and in others they are extraordinarily abundant. The earliest dates in three successive years for the arrival of this bird on the West River were October 9, 15, and 19. In the spring they are generally plentiful, and are shot with Snipe among the mulberry-canes. In the winter of 1900–01 Quails were astonishingly abundant, and again in 1905–06, but in the intervening years their scarcity was equally marked.

At Kwei Hsien young birds were seen on August 11, and a good many adults also. At Shamshui, October 29, a covey of young, just able to fly, was put up, so that this species does occasionally breed so far east and south. In October the birds take to the paddy-fields, where they gorge themselves with ripe rice and become very fat.

The Chinese catch them in springes and in nets. All through the winter these birds may be seen in the shops, in vast numbers, alive, and in big bamboo cages.

EXCALFACTORIA CHINENSIS.

A considerable number of these birds pass through Shamshui on the spring and autumn migrations, but they have not been noticed on the coast, though probably occasionally occurring there.

At Kwei Hsien, on the plain, they were found to be breeding in July. At the end of June, when the grass is cut, the Chinese obtain many eggs, and there is no doubt that this species is double-brooded. From the appearance of the ovaries of a bird shot at Shamshui in August, it is probable that it bred there.

The nest is a well-formed pad of grass, and a clutch of eggs varies from five to eight in number. Some of the eggs obtained at Kwei Hsien were of a plain light olive-colour unspotted, but most have obscure specklings of a rusty hue; the inside of the egg-shells is of a turquoise blue. Eggs vary from ·99 to ·92 in length, and from ·76 to ·72 in breadth, whilst they average ·95 × ·74.

BAMBUSICOLA THORACICA.

The Bamboo Partridge is only found at Howlik, in the forest there. It appears to be a resident, and on May 31 a bird with a brood of chicks was seen by Kershaw. It shows a partiality for thick scrub on the borders of streams; it is exceedingly stealthy in its movements, runs with extraordinary rapidity, and is obtained with very great difficulty. The eggs were not met with.

PHASIANUS TORQUATUS.

According to Fortune, 'Wanderings in China,' who was at Hong Kong in 1841–3, Pheasants were at that time fairly abundant, not far away on the mainland, and many were brought to Victoria and sold to the Europeans. Of course these birds may have come from further afield than he imagined, but still in those days they were not likely to have been imported from Shanghai, as they are now, and so, presumably, they really were not very uncommon on the mainland sixty years ago.

At the present time a Pheasant is an extremely rare bird in the vicinity of Hong Kong or Macao, and indeed is not common anywhere in either Province, so far as the writers are aware. Plenty can be purchased alive in Canton, but these are brought down from the Province of Yunnan in junks, or on rafts.

The shooting of Pheasants is arduous, and three or four in a day is a good bag, for these wild birds run very fast and are got to rise with difficulty. A couple of nests of this species were found on a cultivated island, on the North River, one in long grass and the other in a field of peas, both by Chinese whilst reaping. One of them contained five and the other seven eggs.

The late Lieutenant Tickell, R.N., found a nest in Kwang Si, about twenty miles above Kwei Hsien, at a place called Great Rapids, and at Howlik a Chinese grass-cutter found a clutch of three eggs and promptly ate them.

The eggs measure from 1·87 to 1·79 in length and from 1·39 to 1·36 in breadth, and average 1·87 × 1·37.

TURNIX TAIGOOR.

Only two specimens of this Quail were obtained, both in April, one among mulberry-canes near Samshui, and the other up the North River. This species was carefully looked for, but as it did not occur again must be regarded as an unusual visitor to this part of China.

TURNIX DUSSUMIERI.

This Button-Quail, which bears a strong resemblance to a gigantic bumble-bee when on the wing, breeds in Kwang Si, and occurs occasionally in Western Kwang Tung during the winter months.

One was obtained at Kwei Hsien, in Kwang Si, in July, which had in its oviduct a fully-formed egg ready to be laid. This had a ground-colour of a greenish white, and was spotted and blotched all over with yellowish brown and with shell-markings of darker brown; it measured about 1·00 × ·7 inch.

TURNIX BLANFORDI.

Blanford's Hemipode passes through the West River Valley, Macao, and the New Territory, both on spring and autumn migrations, but was chiefly noticed on the latter.

The first arrivals about Wuchau put in an appearance during the last week of October, but across the water in Macao, they have been observed in great numbers about the middle of November. A few individuals remain throughout the winter, but most hurry through and go further south.

In the spring one of the these birds is occasionally bagged whilst shooting Snipe. Females are more plentiful than males on the autumn passage. The bird does not breed on the West River; probably its area is further to the westward, and it is known to nest in the north of China.

RALLUS INDICUS.

This Rail is a common winter visitor, arriving probably in September and leaving early in April. The time of its arrival is very difficult to ascertain because it frequents the young paddy, through which one cannot walk. When flushed, it flies away, with its legs hanging down, to the nearest cover, and then runs with astonishing rapidity.

HYPOTÆNIDIA STRIATA.

This Rail is a local resident, confined apparently to the coast, for it is not met with on the West River; it is fairly common about Castle Peak Bay, and abounds in some of the country around Mirs Bay.

PORZANA INTERMEDIA.

Baillon's Crake is a bird of passage, and was first seen on March 19; after that date it can be found all through April and as late as May 2. On the autumn passage these birds were first seen on September 18, but Mr. J. C. Kershaw reported having seen one at Wuchau on August 5.

They are fairly numerous but occur singly, so that, although a dozen may be flushed in working through a large marsh, no two will be seen at the same time.

ORTYGOPS EXQUISITA.

This Rail is a rare or accidental winter visitor. Only two specimens were met with, one of which was obtained.

LIMNOBÆNUS FUSCUS.

This Rail is a summer visitor, but no dates of arrival and departure were obtained on account of its extremely secretive habits. It is found equally on the coast and up the rivers.

Nests and eggs were found on various dates from June 13 to September 21, so that it is certainly double-brooded. A nest found on September 21 at Macao was placed in a big tuft of river paddy, and situated two feet above the ground. It was made entirely of dry paddy-straw, fashioned into a rough cup over which the tops of the rice had grown so as to afford it excellent concealment; it contained one fresh egg (see Pl. V. fig. 19).

The river paddy, it should be added, is a larger and stronger variety than the common sort, with thicker stems, which give very good support to nests placed in it.

AMAURORNIS AKOOL.

This species appears to be more common in the winter than at other times, but it is quite possible that this is only apparent, because at that time of year the undergrowth is not so thick as in the summer.

It breeds occasionally, and a nest with two eggs was found on an island amongst paddy-fields at Howlik, and one with four was discovered on the North River.

AMAURORNIS PHŒNICURA.

This Waterhen is a common resident, and during the summer a very noisy one, for it commences its loud and unmistakable call at sunset and continues it all through the night until sunrise. It is often found on the lotus ponds, where it runs on the surface of the leaves with amazing rapidity and appears, at a little distance, to be running on the top of the water.

This bird breeds from May until August, and it rears two broods, and perhaps sometimes three, in a season. The nest is usually placed in a small tree or bush in thick overgrown scrub, and has been found as high as eight feet from the ground. It is often quite well made of leaves, rushes, and twigs, and on one occasion that of *Ardetta sinensis* appeared to have been appropriated.

The eggs are usually six in number, but once seven were found; the young in down are quite black. The eggs average 1·56 × 1·13, and vary in length from 1·67 to 1·43, and in breadth from 1·25 to 1·08.

GALLINULA CHLOROPUS.

The Waterhen is a resident species, the numbers of which are probably increased by migrants during the winter months. It frequents the marshes and the lotus ponds, and is much more shy than is the case in Great Britain.

Nests were found on August 1 and on September 15. The former contained five very hard-set eggs, and the latter one, which was quite fresh, and there can be no doubt that this species is double-brooded. The nests were well concealed amongst dense reeds in both cases.

GALLICREX CINEREA.

The Watercock was a fairly common summer visitor, and was first seen on April 19, and last on October 23. They vary in numbers in different years, but at the end of April and the beginning of May are sometimes exceedingly abundant.

The earliest date for eggs is June 20, and as late as September 2 a young bird only recently hatched and covered with jet-black down was found in a paddy-field and near a nest.

Some of the nests found were very crude affairs, and some were built up as much as eighteen inches, and were quite well made of green rushes and paddy-straw, or of the latter alone.

FULICA ATRA.

During the winter months large numbers of Coots are to be found at Wang Mun, where they prefer brackish water, and, indeed, are sometimes found actually at sea.

Coots were often seen perched on the top of the heaps of paddy-straw which came floating down the broadway at Wang Mun, and the stomachs of those shot contained many shells of mollusca. They were first seen on November 29, and last noticed on April 4.

GRUS GRUS.

The only occasion on which Cranes were observed was at Howlik, January 10, on a thick and misty morning, when a solitary specimen was observed flying low down in consequence of the fog.

GLAREOLA ORIENTALIS.

Pratincoles occur on passage, and have been obtained in March and April and during the second half of October. They were seen at Shia Po and Samshui, both places a considerable distance inland. Their flight resembles somewhat that of a Tern, but is faster.

HYDROPHASIS CHIRURGUS.

The Water-Pheasant is a common summer visitor to certain parts of Kwang Tung; a few old birds arrive first from the south, and the main body about a fortnight later. They leave again late in October, and, rising from the water of their favourite pond, they fly straight away to their winter quarters. Solitary birds have been seen as late as the end of November.

These birds often rest on the water, and can swim and dive well on occasion. The cry is a mournful "Ah whoo!" but when the nest is interfered with they can give vent to a sort of squeaky croak. About Samshui, where there are several ponds in which grow the prickly-leaved lotus, the Water-Pheasant breeds in considerable numbers. The female lays her first egg on the bare surface of the lotus-leaf, but as others are added, she accumulates a certain amount of water-weed and dead leaves, apparently with a view to keeping the eggs from rolling off the unsteady platform. As in India, the number of eggs in a clutch is invariably four.

These birds are very tame, but when their nesting-places are approached the female sits in a straight line, so to speak, with head and tail outstretched, and assimilates remarkably to the colour of the water and the leaves about her. At midday the eggs are left to the care of the sun, and the birds feed, but in the early morning or evening they may be flushed or detected with glasses on their nests.

The eggs are laid at the end of June or early in July, and the bird is not double-brooded. The eggs are of two types, a brownish bronze-coloured and a greenish bronze-coloured; they are pegtop-shaped, and very highly glazed. They average 1·5 × 1·04, and vary in length from 1·74 to 1·3, and in breadth from 1·13 to ·95.

MICROSARCOPS CINEREUS.

This Plover is an uncommon bird in south-eastern China. It is a winter visitor, and has been seen in the Delta country, and also as far west as Kwei Hsien.

VANELLUS VANELLUS.

The Lapwing is a winter visitor, and has been observed near Canton, and further west on various dates in November and December.

CHARADRIUS HELVETICA.

On January 13, 1905, a Grey Plover was shot on some mud-flats at Ngae Mun, an entrance to the Si Kiang, to the westward of Macao, and was the only bird of this species which was obtained. Doubtless it is an accidental bird of passage.

CHARADRIUS DOMINICUS.

The Eastern Golden Plover is a species that passes through south-eastern China on its spring and autumn migrations. It appears, as a rule, in small flocks, sometimes composed of this species only, and sometimes in company with other waders. The majority of the birds observed are immature, but young and adults are found in company. As a rule, they keep to the mud-flats of the Delta country, but have been noticed at Samshui, 100 miles from the coast, and higher up the river still.

The earliest arrivals from the north appeared on August 24, whilst others did not arrive until the last days of October; this is precisely what was observed to take place near Wei Hai Wei. The latest date in the spring on which these birds were seen was May 12 at Samshui, but the majority pass through during the second half of April.

OCHTHODROMUS MONGOLUS.

The Great Sand-Plover is an accidental winter visitor, and has been seen, or shot, on a few occasions only, in the months of January, April, and May.

ÆGIALITIS PERONI.

This little Plover is the commonest wader which spends the winter in south-eastern China, and occurs always in large flocks; it is usually in company with the Dunlin, for which it has a keen appreciation. These little birds are found from Kwei Hsien right through both Provinces to the sea-coast, and frequent not only tidal mud-flats, but large dry sandbanks exposed by the falling river, drained lotus ponds, ploughed paddy-fields, and reedy marshes.

The earliest arrivals from the north were seen about August 4, and others continue to arrive until October and November; in the spring some linger until the third week in May, although most have gone by the end of April.

ÆGIALITIS DEALBATUS.

Ægialitis alexandrina (Linn.); Sharpe, Cat. B. M. xxiv. p. 275, pt.

On January 30, 1906, a specimen of this Plover was obtained on some mud-flats at Macao, where it was in company with a large number of other Waders, Egrets, and Kingfishers. This was the only specimen taken, but others may have been overlooked.

NUMENIUS ARQUATUS.

The Curlew is a common winter visitor to south-eastern China, arriving as early as September 3 from the north, and leaving again, as a rule, by the end of March. It haunts the mud-flats and tidal creeks, and feeds chiefly on small marine mollusca. In the spring large migratory flights pass over from districts further to the south.

NUMENIUS VARIEGATUS.

Whimbrel pass through on migration, and have been observed as early in the autumn as September 4 at Shia Po, a place 100 miles from the sea, and as late as April 20 on their journey to the north.

RHYACOPHILUS GLAREOLA.

The Wood Sandpiper is a common bird of passage, often occurring in large flocks, which frequent both the coast and country inland. The earliest date for its arrival is August 21, and the latest for its departure May 5.

TOTANUS FUSCUS.

The Spotted Redshank is a fairly common winter visitor, but is strictly confined to the tidal mud-flats of the Delta country, and, unlike *Totanus calidris,* is never found inland.

The birds display a great partiality for bathing, dancing and splashing in the water when the tide has covered the flats to a depth of a few inches. They always congregate together in considerable flocks, often comprising several hundreds of birds.

TOTANUS CALIDRIS.

Redshanks occur both as birds of passage and as winter visitors, and have been noticed as early as August 26 and as late in spring as April 18. They occur in small numbers right up the river as far as Kwei Hsien.

HELODROMAS OCHROPUS.

The Green Sandpiper is a fairly common winter visitor, and occasionally may remain for the summer as well, for on July 11 and 24 one was seen on a lotus pond at Ching Ki, close to Samshui. The first arrivals usually come in about the end of July or very early in August, and the main body in September or October, and on the return journey the majority of the birds pass in the first half of April. They are usually solitary and do not combine in flocks, and during the winter more than two are seldom seen together.

This species has been heard calling in July at Kwei Hsien in Kwang Si.

GLOTTIS NEBULARIUS.

The Greenshank is a common winter visitor, arriving about September 21 or 22, and leaving again from about March 3 to April 1; it keeps almost entirely to the salt or brackish water mud-flats, and was only once seen on the river, some fifty miles from the sea. The birds are solitary or in pairs, and show no disposition to join together in flocks.

TRINGOIDES HYPOLEUCUS.

The Common Sandpiper is certainly in most cases a winter visitor, but there can be no doubt that some are resident as well. As early as August 8 a flock of twenty were seen in western Kwang Si, but the majority of those from the north arrive in September, while most of the birds leave again in April. Throughout the winter months they show a great partiality for feeding on the rivers' banks, inland, and on the coast, for the rocky shores of the many inlets about Mirs Bay, and for the boulder-strewn strands of islands in the Canton River estuary.

All through the summer birds have been observed, sometimes singly, and sometimes in pairs, both on the coast and on the river. Whether such are breeding or non-breeding birds is open to question, though certainly the latitude is rather far south for this species.

When they feed along the river-bank after dark, they are often disturbed by the wash of a passing river-steamer, which sends them flying over the stream uttering their well-known cry.

TRINGA PACIFICA.

Pelidna americana (Cass.); Sharpe, Cat. B. M. xxiv. p. 608.

The Pacific Dunlin is an exceedingly common winter visitor, and is almost always to be found in company with *Ægialitis peroni*. Although more numerous on the sea-coast and in the Delta country, these birds are to be found far inland and always in flocks. They leave for the north in March and April.

TRINGA SUBMINUTA.

Limonites damacensis (Horsf.); Sharpe, Cat. B. M. xxiv. p. 553.

Von Middendorff's Stint is a winter visitor, and has been met with at Canton as early as August 25, and at Wong

Sha, fifteen miles above Samshui, as late as April 30. On the last-named date there were a few chestnut feathers on the breast of the birds. This species accompanies larger waders, and is always wonderfully tame.

TRINGA TEMMINCKI.

Limonites temmincki (Leisler); Sharpe, Cat. B. M. xxiv. p. 555.

Temminck's Stint occurs principally on the autumn and spring passages, but an occasional bird may remain for the winter. Like von Middendorff's Stint, it is exceedingly tame. On April 15, and thence to the end of the month, the birds pass northward, and from mid-September until the middle of November, southward again. They prefer paddy-fields and marsh-land to the river-banks, and are met with, as a rule, in small parties.

TRINGA SUBARQUATA.

Ancylochilus subarquatus (Güldenst.); Sharpe, Cat. B. M. xxiv. p. 586.

A Curlew Sandpiper was obtained on April 26, 1907, near Canton, where it was in company with a flock of Eastern Golden Plovers.

GALLINAGO STENURA.

Much that has been said about the Common Snipe applies to the Pintail, but the latter does not arrive on migration so early as the former, and it departs to the north a little later. The earliest date recorded for the arrival is August 9, and the latest for its departure May 12.

This bird is the "Spring Snipe" of European sportsmen, and, arriving in great numbers and in splendid condition at the time of year which gives it its name, is very highly esteemed as an article of diet.

When on the wing this species is easily distinguishable from *Gallinago gallinago* by its darker under wing-coverts and axillaries.

About the middle of April these birds were found to be moulting their "pintail" feathers and those of the upper tail-coverts and back.

GALLINAGO MEGALA.

This Snipe is not nearly so plentiful as the other two species, but is found with them, and has been obtained on various dates from August 26 until May 17, but chiefly during April, when it is most abundant. Probably none of these birds stay all through the winter.

GALLINAGO GALLINAGO.

The Common Snipe, like other members of the genus, is a bird of more than common interest to the bulk of the European residents, as it provides them with their best shooting.

These birds appear in great numbers both on the autumn and spring migrations, and although the majority continue their journey to the south after a variable rest, some pass the winter in favoured localities; none ever remain for the summer.

The habits of this species are so well known that little can be added to what has been said before, but it may be remarked that, in addition to affecting the paddy-fields and marshes, this bird has a great liking in the spring for the beds of mulberry-canes, so plentiful in the Canton Delta.

The earliest date on which this bird was shot was August 25, and the latest May 5; but it should be remarked that it can be obtained in the market at Canton from August 8, and it was seen at Kwei Hsien on the 10th of that month.

The Common Snipe often associates with the Pintail, the last-named largely predominating in the flocks as a rule.

LIMNOCRYPTES GALLINULA.

The Jack Snipe was only met with once, on November 12, at Kong Mun. Although more than 5000 Snipe were examined in four years, no other example of this species was found among them.

SCOLOPAX RUSTICULA.

The Woodcock is a regular, but never an abundant winter visitor, and has been seen from the beginning of November until the middle of April, and is in some years more plentiful than in others. This bird occasionally takes up its winter quarters in a particular wood, or gully, and there remains for the whole season. Woodcocks can be purchased alive in the Canton bird-shops from the middle of October onwards.

ROSTRATULA CAPENSIS.

The Painted Snipe is partially resident and partially migratory in the area under discussion. Females containing eggs ready to be laid were shot at the end of April, and a nest was found on an island amidst the paddy-fields near Howlik, from which a road of retreat had been made by the bird into the growing rice-plants.

In October the resident birds are largely augmented by the arrival of numerous winter visitors. They are inclined to be gregarious, and lie closely in the marsh, or paddy, as they do elsewhere.

PHALAROPUS HYPERBOREUS.

Red-necked Phalaropes were only seen during the ate spring, when, as often happens, there is a decided drop in the temperature, with rain and strong north-easterly winds; under these conditions immense numbers of these little birds have appeared on the waters of Tolo Harbour and Mirs Bay. The greatest inrush was noticed at Tolo Harbour for several days, commencing on April 10, and the latest date on which they were observed was May 2 at Kowloon.

PLATALEA LEUCORODIA.

Spoonbills have been observed in December and April at Deep Bay, Shiapo, and Taiping, and though not at all common are regular winter visitors. At Taiping they were noticed consorting with *Ardea cinerea*, and at Shiapo were observed swimming and putting their heads under water in the shallows, after the fashion of a Duck. On April 3 one was shot, asleep, on a rock, with its long bill depressed against its breast.

PHOYX MANILLENSIS.

The Eastern Purple Heron is a rare winter visitor to some parts of the coast; it has been obtained at Deep Bay.

ARDEA CINEREA.

Herons are resident on the West River, but are rare on the coast. In their habits they resemble their western relations, but display remarkable fearlessness and familiarity in their choice of a nesting-site.

In the centre of Samshui city, in the precincts of the Magistrate's Yamen, is an immense and aged tree, and in this a large heronry is situated. The nests are at a height of about sixty feet from the ground, among the upper and smaller branches, which are for the most part dead. There is another heronry at Shiu Hing city, in the Magistrate's garden, where the birds are never disturbed, and in this case the nests are placed in several scattered banyan-trees, and like those at Samshui are in the upper and dead branches. A few Night Herons breed in this colony also.

The nests are remarkably small for those of this species, appearing to be little larger than those of a Ring Dove, and the sitting bird spreads over them both fore and aft. After the eggs are laid the nests are somewhat added to in bulk however. On January 23, at Samshui, three nests were in process of construction, but on February 16 thirty-three were counted in this one tree, and although some contained well-incubated eggs, others were not yet finished. Twenty-four of the nests contained four eggs each. After one egg is laid the bird sits on the nest. A clutch generally exhibits eggs in various stages from fresh to those in which the embryo is formed. Eggs have been taken on May 3 and on June 4, so that this bird is almost certainly double-brooded. Owing to the fact that the tree at Samshui sheds its leaves at the end of February and becomes green again in April, the nests in the heronries and the birds on them are conspicuous for a great distance.

The Herons capture remarkably large fish at Samshui and Shiu Hing, and the Magistrate's coolies get many a good meal from those which are dropped from the tree tops.

The usual clutch is of four eggs, but three or even two have been noticed. Five occurred on three occasions.

Eggs vary from 2·6 to 2·18 in length, and in breadth from 1·79 to 1·61, whilst the average of a large number is 2·38 × 1·7.

HERODIAS ALBA.

The Great White Egret is an occasional winter and spring visitor to the coast of Kwang Tung, but has not been met with inland.

GARZETTA GARZETTA.

The White Egret is a migrant, and very large flocks of it may be seen at Moto, Deep Bay, and elsewhere. Although commonest in the spring and autumn months, a few individuals may be seen on the West River all through the summer.

At Tak Hing an enterprising Celestial sportsman has made some decoys in the likeness of the species and placed them in trees with intent to deceive, and with like evil purpose has put other decoys, which are presumed to represent *Ardea cinerea*, in the river on the water's edge. He has moreover built a refuge to lie in wait for these fowls, but so far his truly praiseworthy efforts appear to have been unrewarded, although the decoys have been there for years.

DEMIEGRETTA SACRA.

This Egret was met with in the spring and early summer, and never away from the coast. The white phase of plumage was not observed.

NYCTICORAX NYCTICORAX.

Night Herons are very common on the river and certain parts of the coast, and are resident. At Samshui, behind the temple, there is a heronry of this species, numbering some three hundred pairs. The nests, placed in slender bamboos, are small platforms of sticks, so frail that the eggs, when present, can often be seen through them, and in size are only about as large as those of our Ringdove, at least this is the case with the earlier ones. Later in the season the nests appear to be better built and are, to some extent, lined with dry stalks, which do not, however, radiate from the centre as has been described.

The time for laying varies remarkably, for on March 24, though only about a third of the birds were breeding, eggs were found in all stages of incubation, and there were young birds in several nests. At the end of March 1904, there were young birds at Samshui, whereas on April 6, 1906, only one egg had been laid! Three weeks later many birds were breeding and the nests appeared to be better built.

The heronry mentioned by Swinhoe ('Ibis,' 1861) at the Honam Temple, near Canton, no longer exists, though suitable banyan-trees still grow there.

These birds are supposed to be sacred, which does not, however, apply to their eggs, for a hungry Chinaman is not above going to the heronry on the quiet, and shaking the bamboos until an egg, or several, roll out of the shallow nests; if they are not utterly smashed by a fall of twenty feet they are promptly eaten. This peculiar habit of the Celestial may account for the vast numbers of broken egg-shells on the ground at Samshui!

Probably this bird is single-brooded, although young have been found as late as September 11.

Besides the two heronries mentioned above, numerous smaller ones exist on the West River; at Tam Chau, on August 14, from one large banyan-tree in the centre of the city eighty-six of these birds were counted as they flew forth at sunset, to all points of the compass, in nocturnal quest of food, and no doubt there were more, for darkness only prevented others from being seen.

This Heron feeds chiefly on frogs, and the odour of a heronry on a damp, warm, spring day, such as characterizes that season in southern China, is beyond either conception or description.

A mature bird has been observed to mate with one in immature plumage.

The eggs, usually pointed at one end, vary somewhat in shape, and in depth of colour, even in the same clutches.

BUTORIDES JAVANICA.

This Bittern is a summer visitor to south-eastern China, but is not abundant. It breeds up the North River and at Howlik, and in one or two other places, making a slight nest high up in a banyan or fir tree.

When, as sometimes happens, this species nests among a colony of *Ardeola bacchus*, careful identification is necessary, as both eggs and nests of these two species are indistinguishable. Never more than four eggs have been taken in a clutch, and the bird sits much more closely than *Ardeola bacchus*; when put off its eggs it makes no sound, but flies a little way and returns from time to time, but always in silence. Most of these birds appear to commence laying in the first half of June. On one occasion, in the summer, a clutch was taken on the second of the month and put into a drawer on board the gunboat; it was looked at again on the sixth, when it was discovered that the shells had chipped and that the young birds were still alive!

Eggs vary in length from 1·61 to 1·40 and in breadth from 1·08 to 1·16, whilst the average is 1·52 × 1·12.

ARDEOLA BACCHUS.

The Chinese Pond Heron is a resident and very abundant species in Kwang Tung and Kwang Si, but wanders about considerably in the winter months, when its numbers may perhaps be increased by immigrants from the north. In the winter it is sometimes seen at Hong Kong, but it does not breed there.

Birds in winter plumage are difficult to see whilst feeding on the mud-flats, until they take flight, when they at once become conspicuous, as they spread their white wings. As a rule, they feed by day and in the evening fly in flocks like Rooks to roost in some favourite clump of trees, but they do at times feed at night as well.

Among the Chinese they are considered to be a great delicacy.

As a rule, Pond Herons nest in colonies of some size and in high trees, but at the same time small heronries may be encountered and in small trees, and several such occur on the coast of the New Territory. The largest colony, however, is at Samshui, where they breed in the same bamboos as the Night Herons, and as these are much earlier builders, the Pond Herons have to take what nesting-sites they can find, and one on a fallen bamboo, a few feet from the ground, was noticed.

The nests are made of fine bamboo or other twigs, and at Samshui do not outlive the winter gales, although less crude in construction than a casual glance would lead one to suppose.

The eggs are usually four, rarely five, and vary much both in shape and colour, even in the same clutch.

Young birds have been found in the nests as late as September 4, but it is doubtful whether this species is double-brooded, seeing it has many enemies, so that these may be merely belated broods.

Eggs vary from 1·63 to 1·39 in length and from 1·26 to 1·07 in breadth, and average 1·51 × 1·13.

BUBULCUS COROMANDUS.

This species is an occasional visitor on the spring and autumn migrations.

ARDETTA SINENSIS.

The Chinese Little Bittern is a summer visitor and a breeding-species, and very common in suitable places, especially by the sides of reed-grown creeks, in the Delta country. It arrives in the middle of April, a few days after the Cinnamon Bittern, and is very much more plentiful; it leaves again in October, but a few individuals always remain on the river for the whole winter.

As soon as the Bitterns arrive they betake themselves to their breeding-grounds, which are identical with those of the next species in character, but far more extensive. This bird, moreover, often makes its nest in the big river-reeds, which *A. cinnamomea* never does; on the other hand, unlike the latter, it never places its nest on the ground.

The nests resemble those of the Cinnamon Bittern, but at Canton, where these birds have taken to building in the banyan-trees along the Shameen, or Promenade, they are a good deal more substantial. Here the birds make such a mess as to be deemed a nuisance and are being cleared out, which is not an easy matter.

This Bittern has been seen sitting on its tarsus catching flies, which it did with incredibly rapid lunges of its head and bill, and without moving its body at all.

The eggs are laid from early in May until August, so that this bird is probably double-brooded. Clutches of four or five are usual, but as many as seven have been taken. Eggs average 1·30 × ·95, and vary in length from 1·34 to 1·17, and in breadth from ·97 to ·89.

ARDETTA CINNAMOMEA.

The Cinnamon Bittern is a summer visitor, arriving in April and leaving again in October. The usual date of arrival is April 7 or 8, and on one occasion a solitary individual was seen in January.

These birds nest in many favoured spots, but at Kong Mun, on an island, they occur in large numbers in company with *Ardetta sinensis* and *Dupetor flavicollis*. The nest is never placed at any great height, often only at an elevation of a foot or two, and sometimes on the ground itself; it is a slight affair of sticks, lined with a few dead leaves, except when in a thick creeper, where the sticks are dispensed with. Usually it is placed in tangled undergrowth of thorns and weeds, but it has been found in an orange-tree, and occasionally in a bamboo. When on the ground, a hollow is scraped and a few sticks placed in it. The birds sit lightly, and leave their eggs with harsh croaks when disturbed.

The eggs have not the greenish tinge which distinguishes those of *Ardetta sinensis*. The usual clutch is three or four, and the eggs vary in length from 1·24 to 1·22 and in breadth from 1·05 to ·96, and average 1·29 × 1·02.

The birds lay from the last week in May until the middle of June and are single-brooded.

DUPETOR FLAVICOLLIS.

This Bittern is a summer visitor to the delta of the Canton River, and is much the rarest of the three breeding species. It arrives early in May, and after nesting betakes itself to the ripe paddy; when that is cut it looks out for other suitable cover until October, when it vanishes to the south.

Only two nesting-places were found: one at Kong Mun, where this species breeds in company with *A. sinensis* and *A. cinnamomea*, and the other between Kong Mun and Moto Mun, in the reeds; the former only contained three pairs. The nest is just a platform of dead and decaying vegetable matter, and on it two or three eggs are laid. These are white with a greenish tint.

The eggs vary from 1·74 to 1·59 in length and from 1·27 to 1·21 in breadth, and average 1·63 × 1·24.

BOTAURUS STELLARIS.

A few Bitterns occur every winter and are sometimes shot in the Snipe marshes.

PHALACROCORAX CARBO.

Cormorants are winter visitors to the Kwang Tung coast, and they are not found very far up the rivers as a general rule. One particular bird, however, was often noted on a particular stake at a place forty miles from the sea. They appear in November, and for the most part leave again by the middle of April. They have, however, been seen about Hong Kong as late as the first week in May.

Young birds, with white breasts and underparts, were noted on November 26.

The practice of fishing with Cormorants, which is so well known among the Chinese, is only carried on up the North River.

PHALACROCORAX PELAGICUS.

Shags are not uncommon winter visitors to the Kwang Tung coast, though they are never so abundant as the Cormorants. From October until April they may be found in suitable places, and especially on islands off the coast. Shags have been observed as far as eighty miles out at sea, but this is not usual.

PELECANUS PHILIPPENSIS.

Pelicans are rare and unusual winter visitors to Kwang Tung and Kwang Si, and have only been noticed on a few occasions. An immature bird was seen near Wuchau in August 1906, which, when approached, paddled down river at a great pace. Other specimens have been noticed in Deep Bay and off the coast, near Macao, in April.

COLYMBUS SEPTENTRIONALIS.

The Red-throated Diver was noticed once in February 1901, at Deep Bay, when a Chinaman encountered on the road had a bird of this species in a basket and volunteered the information that it had been caught in a fishing-net.

PODICIPES PHILIPPENSIS.

The Little Grebe is a resident species, but subject to considerable seasonal movement. In spring the migration of these birds is easily observed, because the paddy-fields are then dry and they are obliged to keep to the river, whereas in early autumn everything is wet.

The habits of the bird at the nest are the same as they are in England, and on leaving its eggs the female covers them with decayed vegetation. Lotus ponds are especially favoured for breeding purposes, and each pair has its own pond. The nests are hard to find, when hidden by a big floating lily-leaf; and there are no boats on these pieces of water.

Near Canton a Chinaman was observed killing these little birds with a musket ten feet in length; and at Shia Po, where there is a big marsh, they are killed, spatch-cocked, dried flat on stretchers, and sent to market, where the guileless heathen buy them and eat them under the impression that they are wild duck!

The eggs of this species may be found from May until

September, and as late as October 23 a chick about a week old was obtained. The first full clutch of three eggs was taken on June 3. The usual number is three, but six were obtained.

PODICIPES CRISTATUS.

The Great Crested Grebe is a common winter visitor to the creeks of the Delta and to the estuary of the Canton River, near Hong Kong, but was only once seen in Tolo Harbour, on the seaward side of Kowloon Peninsula.

The birds arrive in November, and are usually in small parties or alone ; but as many as a dozen have been seen together. They leave again in March.

HYDROCHELIDON LEUCOPTERA.

White-winged Black Terns are seen every spring in small parties, on their northern journey, but have not been observed on their return to the south. Usually they are noticed during the second week in May, but on one occasion as late as June 2. They have been seen in company with *Sterna caspia* and *Sterna sinensis.* They betake themselves to the flooded marshes and to the mulberry-canes, where they are often observed capturing water-beetles and other insects.

HYDROPROGNE CASPIA.

Caspian Terns pass along the coast in the spring, and particularly in the month of May, when a steady stream of small parties goes by ; but they are to be seen as early as the end of January. They are observed fishing and feeding on the flooded paddy-fields, but do not appear to go far inland.

STERNA MEDIA.

The Crested Tern has been observed twice on the coast of Kwang Tung in the month of September ; on one occasion this was after a typhoon, which may have impeded or altered its migration flight.

STERNA SINENSIS.

The Chinese Ternlet occurs, as a rule, during both the autumn and spring migrations, and chiefly confines itself to the tidal portions of the rivers.

The birds are usually single, but flocks of as many as twenty do occur, and they have been noted quite ninety miles away from the sea. They fish over the marsh-land in the same way as White-winged Black Terns, with which they are often associated.

GYGIS CANDIDA.

This Tern was only observed on one occasion; this was at Macao on September 20, 1905, when a small flock frequented the harbour for three days, during a strong blow from the north-east.

LARUS SAUNDERSI.

This Black-headed Gull has twice been noticed; on March 16, 1904, about a dozen individuals were seen about half-way between Kong Mun and Samshui, on the spring migration, and in September 1906, at Macao, a specimen was brought to Mr. J. C. Kershaw.

LARUS RIDIBUNDUS.

The Black-headed Gull occurs in considerable numbers from the third week in October until February or March, and unlike *Larus canus* frequents the West River for many miles inland; it has been seen in November at Tulok, 190 miles from the sea.

On September 9 an immature bird of this species was seen at Moto; an unusually early date. Like other Gulls, its numbers seem to depend to some extent on the kind of winter weather which obtains.

LARUS CRASSIROSTRIS.

The Bar-tailed Gull is a not infrequent visitor to the Kwang Tung coasts in the months of January, February, and March, when it associates freely with *Larus canus* and *Larus cachinnans*: it does not usually come into Hong Kong

Harbour except in very severe weather. Immature birds, as in the case of *Larus cachinnans*, vastly outnumber those which are in full plumage. These Gulls are exceedingly tame and confiding, coming right alongside a ship at anchor, so that they may be almost touched with a stick.

LARUS CACHINNANS.

The Mediterranean Herring Gull is possibly the only Herring Gull which visits the Kwang Tung coast in the winter months. The earliest date on which it was noticed was September 27, and the latest April 24.

Considerable numbers crowd into Hong Kong and Tolo Harbours and into the Western Approaches and Deep Bay, when the north-easterly gales occur in the winter and early spring; but of these the vast majority are immature birds. Mature specimens of *Larus cachinnans* have often been observed and several times obtained in Hong Kong and Tolo Harbours, but no undoubtedly mature specimen of *Larus vegæ* was either seen, or shot. It seems doubtful, however, whether the young of these nearly allied species are distinguishable, and therefore it is quite possible that both species of Herring Gulls are represented.

LARUS CANUS.

The Common Gull is a moderately frequent winter visitor to the Kwang Tung coast, but it does not leave the salt water.

LARUS GLAUCUS.

An immature specimen of the Glaucous Gull was noticed on several occasions in Hong Kong Harbour, during severe weather with north-easterly winds, during February 1908.

NETTOPUS COROMANDELIANUS.

The Cotton Teal Goose is a species of somewhat irregular occurrence, but has been noticed at all times of the year both on the river and in the Delta. Usually on fresh water, this species has been observed in other situations and on the lotus ponds.

ANSER CINEREUS.

Anser rubrirostris Hodgs.; Salvadori, Cat. B. M. xxvii. p. 91.

Gray Lag Geese occur every winter in small flocks, and have been noticed on the coast and islands, and on the river as well. They usually arrive in November and December, and appear to move to the north again in March.

The only specimen shot was a solitary bird, killed on the river above Shiu Hing, twenty miles above Samshui. On March 4, a Chinaman was seen stalking a small flock of these birds on Shia Po marsh, and to aid him in this difficult proceeding he had arranged a kind of bow of wood, in the centre of which lay the muzzle of his gun, with small green twigs all round on the arc of the bow, to provide him with suitable cover, whilst he, the Celestial, wriggling along on his belly, pushed the whole affair before him.

In northern China, at any rate until quite recently, the wild Geese would allow a native to walk within twenty yards of them.

DENDROCYGNA JAVANICA.

The Smaller Whistling Teal was observed on several occasions during the summer months, but there was no evidence that the species bred, and it should perhaps be looked up on as an accidental summer visitor.

At Fu Wan, twenty miles from Samshui, on July 23, two males of this species were obtained from a lotus pond, and ten others were seen at the same time. Because of their habit of diving and returning to the surface in the air-space under a floating lotus-leaf, these birds were retrieved with considerable difficulty. On August 3 a flock of twenty birds was seen on the same pond, and Staff-Surgeon C. E. Cortis Stanford, R.N., shot a female. On July 16, when proceeding up the Great Rapids, in western Kwang Si, one was flushed from a small island.

ANAS BOSCAS.

The Mallard is an unusual winter visitor to the West River, and has been once shot near Samshui.

ANAS PŒCILORHYNCHA.

The Spotbill is the commonest of the Ducks which spend the winter in south-eastern China; a few remain throughout the summer, and occasionally some of these breed.

This species has a great partiality for salt water, and it has been observed to frequent the small islands off the coast in company with *Larus canus*, *Larus cachinnans, Phalocrocorax*, and *Demiegretta*, and it often rests during the day on the bare boulders that abound on their shores. Sometimes these birds roost on the islands, but usually they flight at sunset to the paddy-fields to feed, and many of them are caught in the flight-nets at Wang Mun, the entrance to the West River. The Chinese who net these Ducks split them down the back, dry them, and sell them in the Canton market.

In May 1904 a female of this species was seen swimming in the sea off one of the islands, followed by five ducklings, and this, together with the discovery, on several occasions, of broken egg-shells, constitutes the only evidence as to the breeding of this Duck in Kwang Tung.

The birds seen during the summer are usually in pairs, or in threes, but in October and November large flocks occur on the river and on the coast, often in company with other species.

MARECA PENELOPE.

Widgeon were observed from October 11 until February 25, occasionally in flocks of their own kind only, but more often in company with various other species.

NETTION CRECCA.

Teal are not uncommon during the winter months, and sometimes large flocks of them are seen on the river.

They arrive as early as the end of August and have been seen as late as the middle of April, but the majority come in during October and November, and they show a much greater partiality for fresh water than some of the other

Ducks. Although associating at times with other species they have a tendency to keep to themselves.

Peregrine Falcons were observed to feed almost exclusively on the Teal, as they also do in northern China.

DAFILA ACUTA.

Near Canton the Pintails select a shallow backwater in which to doze away their daylight hours, and although this is close to the main river, where a continual stream of steamers of all sizes and junks innumerable passes all the time, the Ducks are entirely undisturbed by it. Their habitual caution, however, is never laid aside, for should an attempt be made to approach them in a shallow-draft native boat, they at once bestir themselves, and flapping along the surface in a cloud of spray they gradually rise into the air, and circling round, far out of gunshot, presently take their departure to some other shallow further back.

At sunset they flight to the tidal paddy-fields, there to feast through the dark hours. The Chinese, who know their habits well, set flight-nets of fine, but tough, bamboo fibre for them, and catch great numbers, so that a live Pintail may be purchased, in the winter time, for about threepence-halfpenny, or a dead one, for many get strangled in the nets, for somewhat less. The Chinese prefer to buy their Ducks alive, perhaps to make sure that they are fresh.

QUERQUEDULA CIRCIA.

About two thousand Duck were observed at Taiping, fifteen miles below Samshui, on November 22, and amongst other species was the Garganey. This species occurs both in the autumn and spring on passage, but its numbers vary considerably, and in some seasons none are seen at all; this happened in March and April 1907.

The Garganey keep a great deal to themselves and do not join up with the large flocks of other Teal and Spotbills which winter in south-eastern China. The first date in the autumn is November 12, and the last in the spring April 17, and on the last-named a good many of the birds were paired.

SPATULA CLYPEATA.

Shovelers occur not infrequently during the winter months, both on salt and fresh water, and are usually associated with other species of Ducks. On April 8, two males and three females were seen on a fresh-water lake, in company with a flock of tame Ducks.

FULIGULA MARILA.

Small parties of Scaups have been noticed at considerable distances up the river, as well as in the Delta. At Tolo Harbour in December, very large flocks of these birds were seen and a few were shot. Males are frequently seen alone in small flocks, and they dive continually.

MERGANSER SERRATOR.

The Red-breasted Merganser is a common winter visitor to the Kwang Tung littoral, where, although sometimes associating in small flocks of about a dozen, it very often joins the larger concourses of other Ducks, so common at this time of the year. It was first seen on November 22, and from that time onwards a few were to be met with all through the winter months, and at Tolo Harbour they were still about at the end of April, for the most part paired and in nuptial plumage. These birds have been seen 150 miles away from the sea.

On December 1 one of the writers had an exceptional opportunity of observing a Merganser chasing its prey under water, for he was placed 200 feet above the bird which was in a clear pool with a sandy bottom, into which there flowed a small fresh-water stream, whilst brilliant sunshine showed up every movement made by the Duck. Whilst under water the bird depended almost entirely on its feet, and only twice in half an hour was it seen to open its wings, when submerged, and then the white alar specula were very conspicuous. The agility and speed with which the bird doubled round the rocks and stones whilst under water were extraordinary, and apparently it was invariably successful in capturing the fish it was hunting, although some even threw themselves on to the sandy edges of the pool in their efforts to escape.

At times the bird flapped along the surface of the water with its wings and head alone submerged, and in this way also apparently obtained food. After a successful bout of fishing the Merganser rested on the surface of the pool, and defecated, and this function was performed three times in half an hour. At length a Chinaman passed by, and the Merganser being frightened, made off to sea.

APPENDIX.

A further Note on certain Species of Pericrocotus *which occur in South-eastern China, with the Description of a new Species of the Genus.*

Since the above article was written there have come to light certain facts which appear to call for further comment on this genus, and a species has been differentiated from *Pericrocotus roseus* which it is desirable to name.

To deal with this species first. *Pericrocotus stanfordi*, sp. nov. appears to be most nearly allied to *Pericrocotus roseus* and *P. cantonensis*. From *P. roseus* it differs in the presence, at all ages, and in both sexes, of a frontal patch and an incomplete collar. *Pericrocotus cantonensis* differs from *P. stanfordi* in the total absence of any pink or reddish feathers in the plumage of the male.

The general colour of *P. stanfordi* is that of *P. roseus*, but the frontal patch mentioned above varies from a light pink to orange-buff in colour. The collar is of a very light orange-buff or pink according to age and sex, and inclining to whitish at the sides of the neck. There is a well marked alar speculum which varies much in width in different specimens, and in colour from orange to vermilion in the male. The upper tail-coverts are of a reddish orange colour; the colour appears to vary according to the age of the specimen.

In the female the red or orange of the male is replaced by lemon-yellow.

The measurements are as follows:—Length of the male averaging 7·25 in., of the female 7·10 in.; culmen 0·5 in.; wing 2·5 in.; tarsus 0·7 in.; tail in male 3·7 in., and in female 3·3 in. Bill black, legs brown, irides brown.

It remains to make some remark as to the distribution of these three species: *Pericrocotus stanfordi*, *P. roseus*, and *P. cantonensis*. *P. stanfordi* is found at Samshui, and thence as far west as Tak Hing, where it is replaced by *P. roseus*. Both these species are migratory, and both breed in their respective areas. *P. roseus*, which has not been noticed from China before, probably occurs through Kwang Si and Yunnan on into India.

Pericrocotus cantonensis was only met with once upon the North River, and is, in the writer's opinion, an accidental visitor to the region dealt with in this article. The range of *P. cantonensis* is further to the east and north—so far as is known—than that of the other two species.

What has been written as to habits and nidification under the head of *P. roseus*, applies equally well to *P. stanfordi*.

It has been suggested that *P. stanfordi* is a hybrid between *P. roseus* and *P. cantonensis*.

The type of *P. stanfordi* is, with all the other examples collected, now preserved in the Natural History Museum at S. Kensington.

XXI.—*The Evolution of Adaptation in Parasitic Cuckoos' Eggs.* By E. C. Stuart Baker, F.Z.S., M.B.O.U.

It is still sometimes a matter for argument and discussion as to whether the eggs of Parasitic Cuckoos have undergone, or are now undergoing, any process of adaptation in shape, size, or coloration, to render them similar to those of the foster-parents in whose nests they are deposited.

As regards *Cuculus canorus canorus* it is almost universally accepted as a fact that some such process is being slowly undergone, and that by it a most wonderful adaptation has already been arrived at in many instances. Thus we may point to the striking similarity between some Pipits' eggs and the Cuckoos' eggs which are placed in their nests, or to the many cases in which the Cuckoos' eggs have been found in the nests of *Acrocephalus*, requiring quite a careful examination before it can certainly be decided that they are not aberrant ones of the Warblers themselves; or again, many blue eggs of *Cuculus canorus* have been found in nests of the Redstart, differing only in size and texture from the eggs of that bird.

But there are still ornithologists who declare that no such process of evolution is in existence, and that there is practically no law which governs the Cuckoo's practice as to where it places its eggs. These authorities, in order to enforce their arguments, point to the Cuckoos' eggs which are so often found in other birds' nests together with eggs with which they have absolutely nothing in common; and, if one oologist, trying to prove them wrong, says "How is it that so many blue eggs are found in Redstarts' nests?" the other side replies, "How is it that so many Cuckoos deposit their eggs in the Hedge-Sparrows' nests, yet so very few are found to be blue?" Both are right in what they say, only it is hardly fair to lay down general laws after a study of but one species, and, therefore, before drawing any deductions many species should be studied. Also it should be understood that in the case of the evolution of the Cuckoo's egg nature is working much as she works in other cases. Evolution here only means the elimination of the unfit; creation is the result of destruction, and the process of perfect adaptation is attained by the slow but sure elimination by the foster-parents of those eggs which contrast most distinctly with their own. It is not the Cuckoo that evolves a perfectly adapted egg but the foster-parents, which gradually eliminate the types of Cuckoos' eggs that are so ill adapted as to attract their notice. By this means those strains of Cuckoos which lay the most ill-adapted eggs gradually die out, whilst those that lay eggs most like these of the fosterer are enabled to persist.

Even this process is, however, checked or accelerated by the comparative stupidity or cleverness of the fosterer selected, and this I hope to be able to show conclusively in the following pages.

I have now for many years past collected eggs of Asiatic Parasitic Cuckoos, and a study of the very many hundreds that have passed through my hands has produced sufficient material to satisfy me on the following points:—

1. That the eggs of the Parasitic Cuckoos have undergone, or are undergoing, a process of adaptation.
2. That the majority of foster-parents are totally unconscious of incongruity in size between their own eggs and that of the Cuckoo.
3. That they are not conscious of variation in shape.
4. That individuals do detect differences in coloration.

The species and the subspecies, the eggs of which have passed through my hands, or are now in my collection, are as follows:—

Cuculus canorus canorus; *C. c. telephonus*; *C. c. bakeri*; *C. saturatus*; *C. poliocephalus*; *C. micropterus*; *Hierococcyx sparverioides*; *H. nisicolor*; *H. varius*; *Cacomantis passerinus*; *C. merulinus*; *Penthoceryx sonnerati*; *Chrysococcyx xanthorhynchus*; *C. maculatus*; *Surniculus lugubris*; *Coccystes jacobinus*; *C. coromandus*; and *Eudynamis honorata*.

As regards *Cuculus canorus canorus* I can add nothing to the mass of information already recorded, nor have I seen a sufficient number of the eggs of *C. c. telephonus* to be able to draw any deductions therefrom; the few I have seen are indistinguishable from many of those of *C. canorus canorus*.

Of the next subspecies, however, *C. canorus bakeri*, at least a thousand eggs have passed through my hands, and in regard to these it is not difficult to formulate some propositions to which answers can be given.

Undoubtedly the favourite fosterer to be imposed upon by the Khasia Hills' Cuckoo is the tiny *Cisticola cursitans*, and of the vast number of eggs laid by *C. canorus bakeri* in the Khasia Hills probably more than half are deposited in the little ball-shaped nest of grass made by the Fantail Warbler. The fact that this is so would seem at once to go far towards proving my second point in reference to the comparative size of Cuckoos' and fosterers' eggs, for anything more ridiculous than the sight of a Cuckoo's huge egg on the top of a clutch of *C. cisticola*'s it is difficult to conceive, yet the Fantail accepts the egg as her own and cheerfully undertakes the duties of incubation and its following troubles. At the same time I admit that there must be some reason for the comparatively small size of the parasitic Cuckoos' eggs generally, which would seem to point to the fact that amongst fosterers are here and there birds who are frightened by the formidable size of the intruder, and in consequence refuse to act *in loco parentis*.

As regards coloration, an inspection of a big series shows that the most common types of eggs of *Cuculus canorus bakeri* range from an egg coloured precisely like that of a *Cisticola*, *i. e.* white, sparsely speckled or spotted with reddish, to a very deep dull reddish egg with deeper mottlings or specks of the same colour.

Now, of the eggs which the Fantail Warbler is asked to incubate, the majority are either of the same type as its own egg or else somewhat approaching it in coloration; and it seems that in this case we have a slow process of elimination going on which will eventually result in only that strain of Cuckoo surviving which lays eggs agreeing in everything but size with that of the little *Cisticola*. At the same time this process has not advanced very far, and a large number of Cuckoos still continue to place eggs in the *Cisticola*'s nest which are very unlike those of the foster-parent.

A few Cuckoos of this subspecies also deposit their eggs in the nests of small Warblers, such as *Cisticola tytleri*, *C. volitans*, *Orthotomus*, and *Franklinia*; but it may well be that in these cases the Cuckoo mistakes the nests for those of *Cisticola cursitans*, which they closely resemble. It is, however, only odd eggs at odd times which are deposited in these nests, and I can trace no signs of any process of adaptation being in progress.

When, however, we come to the eggs placed in the nests of birds of the genus *Tribura*, there are good grounds for supposing that the evolution has begun, for instead of finding that most eggs are of the white, sparsely spotted type most often found in the nests of *Cisticola*, we find that the majority are of a pinkish ground-colour densely spotted with red, much like, in fact, the eggs of the bird imposed upon.

Omitting *Cisticola*, the next most popular foster-parents are undoubtedly birds of the genus *Suya*.

All these birds—*S. crinigera, S. atrogularis, S. khasiana*, or *S. superciliaris*—lay very similar eggs, though of many types. The most common forms vary from white, but faintly tinged with pink, to a comparatively deep reddish, with spots, specks, and small blotches of deeper red either disposed in a ring about the larger end or distributed more or less profusely over the whole surface. Here the type of Cuckoo's egg most often obtained is neither the pale form found in the *Cisticola*'s nest nor the deep red-coloured one found in that of *Tribura*, but an intermediate type which assimilates very well with the most common form of the eggs laid by the fosterer.

Unfortunately for the Cuckoos the *Suyas* themselves are very erratic, and sometimes lay eggs which have a bright blue ground; but as only one such egg is laid in every ten or twelve, we should expect, if my theory is correct, to find, as is indeed the case, that evolution has followed the most useful line and that the Cuckoo whose strain is most dominant is the one whose egg agrees with the majority, not the minority, of *Suyas'* eggs.

Leaving the Warblers, the next most popular foster-parents are birds of the genus *Anthus*, represented in the Khasia Hills by *A. striolatus* on the higher ranges and *A. rufulus* lower down. Neither of these species is nearly so common as *Cisticola cursitans, Suya crinigera* or *S. khasiana*, but fully 50 per cent. of the nests of *Anthus* obtained in the above Hills contain Cuckoos' eggs. Here, strange to say, I can find no signs of adaptation; and this is the more curious when we remember that in regard to the eggs of the European Cuckoo, it is between Pipits' and Cuckoo's eggs that we often find the closest and most remarkable likeness, in some cases the Cuckoo's egg being hardly distinguishable from that of the foster-parent.

Birds far less often imposed upon than the above-mentioned Warblers and Pipits are the Silver-eared *Mesia* and the Red-billed *Liothrix*, yet we find very beautiful cases of adaptation to the eggs of these birds. Both species lay eggs which have normally quite a bright, pale blue ground-colour, spotted, often quite richly, with deep reddish brown and purple-black; yet different as these are from any common type of Cuckoos' eggs, I have taken quite a number of well-matched blue or bluish Cuckoos' eggs from their nests. The inference to be drawn here is that as a class *Mesia argentauris* and *Liothrix lutea* are intelligent birds, and accordingly refuse to sit on ill-matched eggs more often than most other birds do.

The eggs of Baker's Cuckoo are rarely found in the nests of other Babblers, though they may at odd times be met with even along with eggs so unlike their own as those of the Scimitar Babblers or of the little *Alcippe*.

A good many Cuckoos place their eggs in the nests of Shrikes; and here again adaptation has proceeded further on the road to completion than in most cases, doubtless for the same reason as with the genera *Mesia* and *Liothrix*, the process of elimination of wrongly coloured eggs being conducted by the foster-parents with more regularity and discretion. Many clutches of this species containing Cuckoos' eggs are beautiful examples of adaptation, whilst the contrast in the others between the lawful and the adopted eggs, if considerable, is seldom violent.

Flycatchers, more especially those of the genera *Stoparola*, *Niltava*, and *Cyornis*, are fairly frequently cuckolded, and the Cuckoos' eggs, in many cases, agree well with those of the fosterers named, and have probably already advanced a considerable way towards perfect adaptation; but at the same time they are still often wrongly coloured, and when deposited in the nests of *Rhipidura* and certain other Flycatchers, as they occasionally are, it can only be said that the parent Cuckoo must have placed them there by mistake, or because she was tired of carrying them about in her mouth any longer.

We also find that the egg of this Khasia Hills' Cuckoo generally assimilates well with those of the smaller Thrushes, Chats, Forktails, etc., with which it is often placed, more particularly with those of *Notodela*, *Henicurus*, and *Rhyacornis*, birds of which three genera are usually selected to have the honour of hatching the young Cuckoo.

On the whole, therefore, it appears that the foster-parents of the Khasia Hills' Cuckoo have achieved some success in the process of elimination of eggs contrasting with their own, but there is still much to be done, and they are greatly handicapped by the fact that so many of the fosterers selected are themselves variable in the colours of their own eggs.

Cuculus micropterus is a bird about which I will say nothing, for, though I think that there is no doubt that this Cuckoo lays a blue egg, like the blue type of egg of *Cuculus canorus canorus*, it is not yet so proven beyond all question.

Cuculus saturatus is a Cuckoo of which we have oviduct eggs, and the very few eggs of this bird found in nests are practically all exactly of the same type, *i. e.* pure white elliptical eggs, with a few tiny specks of reddish scattered over the whole surface. These, so far as we know, are generally laid in the nests of Warblers, such as *Phylloscopus trochiloides*, and other birds which lay either pure white eggs or white eggs more or less spotted. Osmaston, however, found two eggs in nests of *Niltava sundara*, and I have taken an egg from the nest of this species and others from nests of *Stoparola* and *Henicurus*, and one from the nest of a *Pomatorhinus*.

Of *C. saturatus*, therefore, we may say that she has had her eggs adapted to those of the class of the foster-parent most often victimised, but that she still occasionally gets other birds to accept and hatch her eggs.

Cuculus poliocephalus.—In regard to this bird also we are on quite safe grounds in drawing conclusions, for here, too, we need only base our conclusions upon eggs which are identical in all respects with oviduct specimens. These are of two distinct types—one pure white, or, in the rarest of instances, extremely faintly marked with pink specks, and the other in colour ranging between a bright terracotta-red and deep chocolate.

The foster-parents of the white type are generally Warblers of the genera *Phylloscopus*, *Acanthopneuste*, and *Cryptolopha*, all of which lay white eggs, but the white type has also been taken on one occasion from the nest of *Lophophanes*.

The fosterers of the red type are birds of the genus *Horornis*, *Prinia flaviventris*, *Oligura castaneicoronata*, and *Tesia cyaniventris*, which themselves lay red eggs, but red eggs have also been taken in the nests of *Stachyridopsis*, *Dymochares cruralis*, *Niltava*, *Cyornis*, *Pratincola*, *Orthotomus*, and *Tribura*.

In the vast majority of cases in India, however, we find that the dark eggs are placed in the nests of some species of *Horornis*, whilst further east, in Japan, they are almost invariably placed in the nest of *Cettia cantans*; in fact, Mr. Allan Owston, from whom I procured a fine series of these eggs, tells me that he has never found them in any other nest. Mr. S. Whymper certainly found a very deeply coloured red egg of this bird in the nest of *Phylloscopus affinis*, but *Horornis pallidus* was very common in the vicinity, and doubtless a bird of this species should really have been the fosterer selected.

I have also had eggs sent me by dealers and others as being specimens of this Cuckoo's eggs, but they not only do not agree in coloration—which in eggs of the *Cuculidæ* is of no importance—but they do not agree in size, shape, or texture, and, so far, there is no evidence to show that the eggs of any one of the many species of Cuckoo vary in these respects.

Penthoceryx sonnerati.—Of this bird there is but one oviduct egg in existence, so far as I am aware, and this is in the collection of Mr. J. Davidson. I have, however, a considerable series of eggs which very closely resemble this oviduct egg and which certainly are Cuckoos' eggs, and which, by the process of elimination, can be fairly satisfactorily proved to belong to this bird. Besides the oviduct egg referred to. Mr. Davidson obtained others in the nest of *Otocompsa fuscicaudata* and *Dumetia albigularis*.

Mr. T. R. Bell several times found *Ægithina typhia* feeding young *Penthoceryx*, and once found a Cuckoo's egg in an Iora's nest which he described as rather like an egg of the foster-parent, but bigger and elliptical in shape.

The majority of the eggs I have taken, and which I believe to belong to this Cuckoo, have been found in the nests of *Alcippe nepalensis* and *A. phayrii*, and I have also eggs taken from the nests of *Turdinus abbotti*, *Turdinulus roberti*, *Stachyris nigriceps*, *Orthotomus sutorius*, and *Stachyridopsis rufifrons*. The eggs they most nearly approximate are those of *Alcippe*, and it is probable that many of this Cuckoo's eggs are passed over because they are so exactly like the others in the nest. Here adaptation in so far as the *Alcippe* eggs are concerned may be accepted as practically complete, and in regard to *Turdinus* and *Turdinulus* as quite sufficient to ensure survival. In other cases they may be considered to be mistakenly placed.

Cacomantis passerinus and *C. merulinus* both normally lay eggs which can hardly be distinguished from many varieties of *Suya* eggs that I have already described; and from the description given it will be seen that when the Cuckoo has had the luck to put its egg in with the right variety of *Suya*'s egg, it is hard to tell one from the other. As a rule, however, the Cuckoos' eggs are considerably bigger, more elliptical in shape, and of a somewhat softer and finer texture.

In eastern India *C. merulinus* puts its egg, in at least four out of every five cases, in the nest of the *Suya*, and in regard to this bird's egg, adaptation is as far advanced as we can ever expect it to be. The other fosterers selected are nearly always either *Orthotomus* or some species of *Cisticola*. The western form, *Cacomantis passerinus*, also usually selects these birds' nests for its eggs. In both of these cases the fosterers' and Cuckoos' eggs agree very well, though the latter are much the larger.

In Hyderabad, however, we find quite the most wonderful case of adaptation occurring amongst the eggs of parasitic Cuckoos. In this town in the Deccan and the surrounding country, the most common little Warbler appears to be *Prinia socialis,* belonging to that section of the genus which lays a brilliant brick-red egg. The Plaintive Cuckoo (*C. passerinus*), having decided that this bird is, locally, the best fosterer, accordingly puts its egg into the Warbler's nest, but elimination has here gone on until it has evolved a red egg, quite near enough in colour to deceive the foster-parent.

A series of these eggs is especially interesting as showing fairly clearly how adaptation of the Cuckoos' eggs is arrived at, for although the extremes of the types are startling in their contrast, eggs are obtained which show intermediate stages of development.

Judging from a series such as this, it would appear that amongst the many individuals upon which these Cuckoos foist their domestic duties there are a considerable number which do detect the differences between their own eggs and the Cuckoos' eggs. When the differences are very conspicuous, some of the eggs get left unattended to, and the strain which lays them dies out, whilst those which lay the less conspicuous eggs increase in numbers. Thus from generation to generation the process of elimination goes on until a state of perfection is arrived at, which suffices to invariably deceive the bird it is intended to cuckold. In this instance we have the Plaintive Cuckoo, which normally lays a very different egg, here in the Deccan gradually reduced to a strain of birds which lay red eggs not very unlike those of the locally most popular form of foster-mother.

Hierococcyx nisicolor.—If we are to judge by the degree of perfection arrived at in the adaptation of their eggs to those of their fosterers, then the genus *Hierococcyx* must be held to be the oldest form of Cuckoo, with the exception of the genus *Coccystes,* for the eggs of all three of our Indian forms—*H. nisicolor*, *H. varius,* and *H. sparveroides*—have undergone a process of elimination long enough to leave only those survivors who have been most successful in laying eggs of an appropriate colour.

The Small Hawk-Cuckoo (*H. nisicolor*), which lays long elliptical eggs of various shades of olive-brown, more or less mottled or spotted with reddish, has a rather wide range of fosterers; but the majority of these will be found to lay eggs of a very indefinite kind of colour, such as olive-brown, olive, reddish brown, etc., with which the Cuckoo's own eggs very closely agree. Eggs have been taken from the nests of *Stachyridopsis rufifrons*, *Arachnothera longirostris*, *Turdinulus*, *Pellorneum mandellii*, *Alcippe*, and *Drymocataphus*, but the favourite fosterers are Flycatchers of the *Niltava* and *Cyornis* groups, more especially the latter.

Hierococcyx varius lays plain, rather dark, blue eggs, which correspond more closely, perhaps, to those of the ordinary fosterer than do those of any other Cuckoo, and its eggs may be found in the nests of almost every member of the genera *Argya* and *Crateropus*. It is very hard to distinguish the Cuckoo's egg from the eggs of these Babblers, so closely do they resemble one another in size, shape, and colour, and even in texture the Cuckoo's egg is not nearly so well differentiated as is generally the case. It is only when one gets well outside the ordinary breeding-limits of this Hawk-Cuckoo that one finds it placing its eggs in nests other than those mentioned: thus in the Khasia Hills, low down near Sylhet and Kamroop, I have taken a few eggs in the nests of *Garrulax moniliger*, one or two in the nests of *Trochalopterum chrysopterum*, *Actinodura khasiana*, and a single egg from the nest of *Niltava macgrigoriæ*. With this last exception and one other egg sent to me from Travancore, which was taken in the nest of *Irena puella*, all have been placed in nests of birds laying blue eggs, with which the Cuckoos' eggs agree very well.

Hierococcyx sparveroides, the third species of Indian Hawk-Cuckoo, lays two kinds of eggs: the first and most common kind is a richly coloured olive-brown egg which is almost invariably laid in the nest of *Arachnothera magna*, a Spider-Hunter which itself lays an egg of the same colour, shape, and texture, differing only in being much smaller and more glossy. So rare are the exceptions to this rule that I think we may take it as a fact that when the Large Hawk-Cuckoo places her egg in other nests, she only does so by mistake or in an emergency.

The second type of egg she lays is much like the first in shape and texture, but is generally a good deal bigger and is a bright pale blue-green quite unspotted. The first egg of this kind found was taken by Colonel Rattray from the nest of a *Myiophoneus*, but this must have been an unusual nest to select, as no others have since been taken from it. The birds appear, in their western range, to place their eggs in the nests of *Trochalopterum lineatum*, *T. nigrimentum*, *T. erythrocephalum*, and *Ixops nepalensis*, whilst in their more eastern habitat they are deposited in the nests of *Garrulax moniliger*, *G. pectoralis*, and *Trochalopterum chrysopterum*.

Here we have exhibited a form of parallel evolution by elimination, the one strain of Cuckoo placing its blue egg in the nests of several species of birds laying similarly coloured eggs, and the other surviving strain laying olive-brown eggs in the nests of a single species which also lays eggs of the same uncommon colour.

The next genus of parasitic Cuckoo contains two species, *Coccystes coromandus* and *C. jacobinus*.

Coccystes coromandus lays but one type of egg, a large, very spherical blue egg of a silky texture and very fine grain, which cannot possibly be mistaken for any other kind of Asiatic Cuckoo's egg, except in the case of very abnormally small eggs which might be as small as abnormally large *C. jacobinus* eggs. The usual fosterer which has to entertain the young Crested Cuckoo is one or other of the Laughing-Thrushes, which lay blue eggs similar to the Cuckoo's own egg. The principal among these are *Garrulax moniliger*, *G. pectoralis*, *Trochalopterum squamatum*, *Grammatoptila striata*, *G. austeni*, and *Trochalopterum chrysopterum*. On rare occasions only are they placed in the nests of *Actinodura ianthocincla* or *Garrulax leucolophus*, or similar unsuitable nests. Here the elimination of the unsatisfactorily coloured eggs may be accepted as being completed; and it will be seen that the process of adaptation has evolved an egg which agrees most closely with the eggs of *Garrulax moniliger*, *G. austeni* and *G. striata*, the normal foster-parents of the young *Coccystes*. The rare occasions in which they are not placed in the nests of Laughing-Thrushes which lay blue eggs are probably mistakes, being so placed by the Cuckoo before there are any of the fosterers' eggs in the nests, or because, though there are eggs, she herself cannot distinguish their colour.

Coccystes jacobinus, throughout the greater part of its range, selects the same nests as does *Hierococcyx varius*, and though their breeding-season is not the same, there is an overlapping period when eggs of the Hawk-Cuckoo, the Pied Crested Cuckoo, and the foster-parent may be found in the same nest, the majority quite indistinguishable one from the other; all are blue, and all of much the same size, texture, and shape.

The smallest of our Indian parasitic Cuckoos, of the genus *Chrysococcyx*, also give us a most beautiful example of adaptation. We have no oviduct specimens of these birds' eggs, but to Messrs. A. Primrose and Chas. M. Inglis we owe an equally good proof of identity. These two gentlemen discovered a place where the little Sun-bird *Æthopyga seheriæ* was breeding very freely, and in many of the nests they found that there was one egg exactly similar in colour to the Sun-bird's egg, but decidedly larger. Specimens were sent to me, and in response to my request an egg was left *in situ* and hatched; when, later, the almost full-grown bird was sent to me, it proved to be a specimen of *C. maculatus*.

Here we have a small metallic-coloured Cuckoo depositing its eggs similar, in all respects but size, to those of the Sun-bird, in the nest of a bird the cock of which is also metallic-coloured.

Since this discovery was made I have obtained other eggs of this and of the Violet Cuckoo (*C. xanthorhynchus*) in nests of *Arachnothera longirostris*, with eggs of which they agree fairly well, and in the nests of *Orthotomus* and *Cisticola*, with eggs of which they do not agree at all. The proper fosterers for this Cuckoo are undoubtedly birds of the genus *Æthopyga*, and I have eggs from the nests of *Æ. seheriæ*, *Æ. gouldiæ*, and *Æ. saturata*, in regard to which adaptation may be considered complete.

The only other Indian parasitic Cuckoo which it is necessary to mention is the Koel, *Eudynamis honorata*, which lays its eggs in the nest of the Indian Crow, *Corvus splendens*, its Burmese cousin, *C. insolens*, or in that of the Jungle-Crow, *Corvus macrorhynchus*. In addition to these I have also records of its eggs having been found in the nest of *Pica sericea* in Burmah. The Koel's eggs agree very well with those of all these fosterers, and it is also noticeable that its eggs are not small for the size of the bird; diminution in size is not necessary, as the Crows' eggs are bigger than its own.

The foregoing notes will possibly suffice to show that from the numerous and varying types of eggs laid by parasitic Cuckoos those eggs which contrast most vividly with the eggs of the foster-parents are being gradually eliminated. In some genera and species, such as *Coccystes*, which we may therefore presume to be one of the oldest forms of Cuckoo, this process of elimination has been going on for so long that the Cuckoos who originally laid ill-adapted eggs have died out, whilst those which laid eggs closest in appearance to the fosterers have survived, succeeding generations of the latter having finally eliminated all abnormal strains until almost perfect adaptation has been secured. Especially in the remarkable adaptation of the egg of *Cacomantis merulinus* to suit the bright red egg of a special foster-parent within a small range of country, we have a case which the opponents of evolution in adaptation will find very hard to get over.

Before concluding I should perhaps say something in answer to the non-evolutionary theorists, who assert that the whole of the contention that foster-parents do sometimes refuse to incubate Cuckoos' eggs is only an illusion. That some birds do so refuse would, however, seem to be partly proved to be true by the fact that I have sometimes found nests, containing a Cuckoo's egg, deserted by the rightful owners, and that in such cases the Cuckoos' eggs have contrasted very strongly with the others. Such nests I have come across in the case of species of *Suya*, *Cisticola*, *Horornis*, *Garrulax*, *Mesia*, *Liothrix*, *Anthus*, and, finally, *Lanius*; and in this last case it looked as if the Shrike, in a fury at the deception attempted on itself, had itself broken the Cuckoo's as well as its own eggs, since all were smashed, evidently by a bird's bill.

In another case two nests of *Anthus striolatus* each containing a Cuckoo's egg were found deserted. The nests were close together on "The Peak" near Shillong, and the Cuckoo's eggs, evidently laid by the same Cuckoo, were of the white boldly speckled type, quite unlike the dull brown eggs of the Pipit. Again, it must be remembered that deserted nests with eggs are not often found, which is hardly to be wondered at, for vermin soon dispose of any eggs which are not well protected. Again, nests found only a day or two after desertion do not in any way show the finder that they have been deserted, for the parent birds often hang about the site of a deserted nest for days after they have made up their minds to leave it. In addition to all this, however, it must be noted that there are also occasions on record in which a bird has built a second nest actually on the top of the first, rather than hatch a Cuckoo's egg laid in that first made.

XXII.—*On the Linnean Names* Strix funerea *and* Anser erythropus, *and on the Species which should be referred to them.* By Dr. Einar Lönnberg of Stockholm.

In the tenth edition of the 'Systema Naturæ,' 1758, the name *Strix funerea* was given by Linnæus to a Swedish Owl, which, according to the quotation by the author himself, is described as no. 51 in the 'Fauna Svecica,' 1746. In the latter work we find for species no. 51 a short diagnosis, a quotation "Rudb. pict." . . . , and a description. "Rudb. pict." refers to the coloured plates which Professor Olaf

Rudbeck * of Upsala had prepared, and which Linnæus had ample opportunities of studying when he, as a student, lived in Rudbeck's house and was allowed full admission to his library. According to the quotation in the 'Fauna Svecica' (*l. c.*), Rudbeck called the Owl in question "Noctua major, oculorum iridibus pallide luteis." These words are also still to be read on Rudbeck's original plate no. 170, which represents a specimen of Tengmalm's Owl. Most of Rudbeck's coloured bird-plates are preserved in the library of Baron C. De Geer at his estate Löfsta in Upland. There is also a set of copies, prepared by Rudbeck himself about 1720, in the library of the Royal University of Upsala. In the latter series the corresponding plate has the number 10. There ought perhaps also to be mentioned here that in both sets of plates there is another coloured figure of Tengmalm's Owl as well, viz., no. 165 among the originals and no. 9 among the copies. This latter figure and its duplicate has the same Swedish name "Större Stenuglan" (*i. e.* "Greater Stone-Owl") inscribed on them as on the previously mentioned plates, and the Latin "name" or diagnosis differs only by giving another colour of the eyes, viz., "iridibus croceis." But although both these two pairs of plates represent the same kind of Owl (as was also evidently Rudbeck's opinion), and are very similar (with the exception of the colour of the eyes), they are very different in size, and the first-mentioned pair appears to represent a much larger bird. This is the reason why Linnæus, when, in the 'Fauna Svecica,' 1746, he refers to Rudbeck's original plate no. 170, says: "Magnitudo corvi"; but, referring to the original plate no. 165, says, "Magnitudo cuculi" (*conf.* 'Fauna Svecica,' 1746, sp. 50). This different size induced Linnæus to regard these plates as possibly representing two different species, and he quotes them under two different numbers in the 'Fauna Svecica,' 1746, but he gave only one of them a name in the

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* It is thus erroneous when Hartert, in 'A Hand-list of British Birds' (London, 1912), p. 105, footnote, states that the name *funerea* "was principally based on a figure by Billberg representing Tengmalm's Owl."

'Systema Naturæ,' 1758, viz., *Strix funerea.* The plates are quite easily recognizable in both sets, and they prove that no. 50 as well as no. 51 of the 'Fauna Svecica' represent Tengmalm's Owl according to Rudbeck's plates, in spite of the difference in size of the figures. Rudbeck's plate 170 is the type of species 51 in 'Fauna Svecica,' 1746, as the quotation there proves, and to this species the name *funerea* was given in 1758. Seeing that the plate, as stated above, very distinctly displays a coloured figure of Tengmalm's Owl, it is quite plain that this species must have the specific name *funerea* attatched to it, even if Linnæus has exaggerated the size of the bird by saying "Magnitudo corvi."

But, supposing that, in spite of everything, this was not evident enough, the description in the 'Fauna Svecica' cannot be applied to any other Swedish Owl. Linnæus writes, "Corpus totum supra sordido-cinereum, maculis pisiformibus albis." These round white spots which are so characteristic of Tengmalm's Owl, and which have given it its modern Swedish name, "Pärluggla"="Pearl-Owl," are not to be found in any other Swedish Owl. It is true that *Surnia ulula* also has white spots, but that Owl was very well known to Linnæus, and when he describes it as no. 52 in 'Fauna Svecica' he writes, "Corpus supra fuscum, maculis albis majusculis adspersum" (not to mention several other characteristics, as the undulated pattern of the breast, the long tail, &c.). He thus correctly points out that the white spots of the Hawk-Owl are larger than in the species which he later called *funerea*. From this, I hope, it will be concluded that the specific name *funerea* is the first and correct one for Tengmalm's Owl, because a good and easily recognizable coloured plate must be as good a type as a skin.

The name "*Anas erythropus*" was given in the 'Systema Naturæ,' 1758, by Linnæus to the Goose described in 1746 in the 'Fauna Svecica' as no. 92. In this latter work we find a quotation, "*Rudb. pict.* Anser cinereus ferus, torque inter oculos & rostrum albo, erythropes." This proves that Linnæus originally based this species on one of Rudbeck's coloured plates, which had such an inscription as the one quoted. Unfortunately this plate does not exist any longer, but it is known that a great number of Rudbeck's plates were prepared during his journey to Lapland. It is thus probable that he obtained the original for the now lost Goose-plate at that time as well. If this supposition is correct, it must have been a specimen of the *Lesser* White-fronted Goose, because the larger species is not to be found there. This is not satisfactory proof, I admit. Further evidence, however, can be obtained by studying other Linnean papers. One of these is his "Methodus Avium Sveticarum," which was first written in Upsala in 1731, and was chiefly, or at least to great extent, based on Rudbeck's bird-plates. Subsequently Linnæus carried this little manuscript book with him in his pocket as a kind of ornithological diary, and entered in it the notes on, or descriptions of, such birds as he happened to obtain during his travels to various parts of Sweden *. As species no. 63 in this "Methodus" we find Rudbeck's White-fronted Goose mentioned with the short diagnosis which this author had written on his plate, and which has been quoted above. At a later opportunity, Linnæus added, "femina est in Helsingia rostrum sordide carneum, frons albus, caput, collum, dorsum et cauda järngrå [a Swedish word, which means "iron-grey"], pectus et venter candidus, maculis ad finem sterni nigrescentibus aspersis, pedes sanguinei." This appears to indicate that Linnæus at some opportunity during his travels in northern Sweden had a fresh female specimen of a White-fronted Goose before him, and as only the *Lesser* White-fronted Goose occurs there it must have been such a one. It is also evident that it is just these notes with few alterations which have been used for the "description" of species 92 of the 'Fauna Svecica,' 1746.

In the year 1751 Linnæus lectured in Zoology at the Royal University of Upsala. These lectures exist in several manuscripts (one of which is about to be printed). In these lectures Linnæus says, "*Anser erythropus,*

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* This "Methodus" has been printed from the manuscript (1907, Upsala).

Fn. [='Fauna Svecica'] 92. Hellsinggås*, as Clusius names it, and it is certain that it, in our country, chiefly lives in Helsingeland [=Helsingia, at that time meaning northern Sweden generally]; but that it has received its name from this can neither be proved nor denied. This as well as . . . . species lay their eggs in our country, and hatch their young here, but fly from us during the winter and become useful to other nationalities, and they are shot in Holland in considerable quantities. They have rather palatable flesh, and it is a pity that we do not use them, as we have more right to do so, because they propagate in our country." This proves very plainly that Linnæus regarded *Anser erythropus* as a species breeding in Sweden, and as this only is the case with the *Lesser* White-fronted Goose (*not* with *Anser albifrons* Scop.), the specific name "*erythropus*" must be used for the smaller form.

Anser albifrons Scop. has never been found breeding in Sweden. Every statement to the contrary is based upon error.

XXIII.—*A Reference List of the Birds of New Zealand.* Part II. By Gregory M. Mathews, M.B.O.U., and Tom Iredale.

[Continued from p. 263.]

Order ARDEIFORMES.

Family PLEGADIDÆ.

Genus PLEGADIS.

Plegadis Kaup, Skizz. Entwick.-Gesch. Nat. Syst. p. 82, 1829.

Type (by monotypy): *P. falcinellus* (Linné).

Plegadis falcinellus (Linné). Glossy Ibis.

Tantalus falcinellus Linné, Syst. Nat. 12th ed. 1766, p. 241: Austria.

Synonym:—

Plegadis falcinellus Buller, Suppl. vol. i. p. 192.

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* In translation from the Swedish text.

Range :—New Zealand (accidental occurrence : one record, near Timaru, South Island, May 1902) ; extralimital.

Family PLATALEIDÆ.

Genus PLATALEA.

Platalea Linné, Syst. Nat. 10th ed. 1758, p. 139.
Type (by monotypy) : *P. leucorodia* Linné.

Platalea regia regia Gould. Royal Spoonbill.

Platalea regia Gould, Synops. Birds Austr. 1838, part iv. App. p. 7 : East Coast of New South Wales.

Synonyms :—

Spatherodia melanorhynchos Reichenbach, Nat. Syst. Vögel, 1852, p. xvi : New South Wales.
Platalea regia Buller, Suppl. vol. i. p. 193.

Range :—New Zealand (accidental visitor, three occurrences : Manawatu, North Island, April 1875 ; Buller River, South Island, Jan. 1892 ; near Greytown North, North Island, May 1905) ; extralimital.

Family ARDEIDÆ.

Genus ARDEA.

Ardea Linné, Syst. Nat. 10th ed. 1758, p. 141.
Type (by subsequent designation) : *A. cinerea* Linné.

Ardea cinerea rectirostris Gould. Australian Grey Heron.

Ardea rectirostris Gould, Proc. Zool. Soc. Lond. 1843, p. 22 : New South Wales *.

Synonym :—

Ardea cinerea Buller, Suppl. vol. i. p. 193. [The type-locality of *Ardea cinerea* Linné, Syst. Nat. 10th ed. 1758, p. 143, is Sweden, Europe.]

Range :—New Zealand (accidental visitor : one occurrence at sea near Auckland, North Island, 1898) ; extralimital.

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* This bird does not appear to have been obtained in New South Wales but came from India. *Cf.* Stone and Mathews, Austral. Avian Rec. vol. i. 1913, p. 142.

Genus HERODIAS.

Herodias Boie, Isis, 1822, p. 559.

Type (by subsequent designation): *H. egretta* (Gmelin).

Herodias alba maoriana, subsp. n. New Zealand Great White Heron.

Synonym:—

Herodias timoriensis Buller, Suppl. vol. i. p. 194. [The type-locality of *Ardea alba* Linné, Syst. Nat. 10th ed. 1758, p. 144, is Sweden, and that of *A. timoriensis* Lesson, Traité d'Orn. 1831, p. 575, is Timor.]

Range:—New Zealand; only known breeding places in South Island.

Note:—*H. a. maoriana* is much larger than *H. a. syrmatophora* Gould (Birds Austr. vol. vi. pl. 56, 1846: New South Wales), the nearest breeding subspecies of *H. alba*. Longest wing-measurement in *H. a. syrmatophora*, 386 mm.; in *H. a. maoriana*, 425 mm. Type in the British Museum.

Genus NOTOPHOYX.

Notophoyx Sharpe, Bull. Brit. Orn. Club, vol. v. 1895, pp. xi, xiii.

Type (by original designation): *N. novæhollandiæ* (Latham).

Notophoyx novæhollandiæ (Latham). White-fronted Heron.

Ardea novæhollandiæ Latham, Index Ornith. vol. ii. 1790, p. 701: New South Wales.

Synonym:—

Notophoyx novæhollandiæ Buller, Suppl. vol. i. p. 196.

Range:—New Zealand; extralimital.

Genus DEMIGRETTA.

Demigretta Blyth, Journ. As. Soc. Bengal, vol. xv. 1846, p. 372.

Type (by monotypy): *D. concolor* Blyth.

Demigretta sacra matook (Vieillot). New Zealand Blue Heron.

Ardea matook Vieillot, Nouv. Dict. d'Hist. Nat. vol. xiv. 1817, p. 416 : New Zealand.

Synonym :—

Demiegretta sacra Buller, Suppl. vol. i. p. 198. [The type-locality of *Ardea sacra* Gmelin, Syst. Nat. 1789, p. 640, is Tahiti.]

Range :—New Zealand (breeding).

Genus NYCTICORAX.

Nycticorax Forster, Synopt. Catal. Brit. Birds, 1817, p. 59.

Type (by monotypy) : *N. nycticorax* (Linné).

Nycticorax caledonicus australasiæ (Vieillot). Australian Night Heron.

Ardea australasiæ Vieillot, Tabl. Encycl. Method., Orn. vol. iii. 1823, p. 1130 : New South Wales.

Synonyms :—

Ardea maculata (not Boddaert) Latham, Suppl. Index Ornith. 1800, p. lxiv. : New South Wales.

Ardea novæhollandiæ (not Latham) Vieillot, Nouv. Dict. d'Hist. Nat. vol. xiv. 1817, p. 436 : New South Wales.

Nycticorax caledonicus Buller, Suppl. vol. i. p. 197. [The type-locality of *Ardea caledonica* Gmelin, Syst. Nat. 1789, p. 626, is New Caledonia.]

Range :—New Zealand (accidental visitor, few occurrences ; it is more probable that these were stragglers from Australia than from New Caledonia, but it should be noted that Australian birds were liberated at Wellington in 1852 : *cf.* Buller, Suppl. *loc. cit.* The records of the specimens preserved should be criticised) ; extralimital.

Genus IXOBRYCHUS.

Ixobrychus Billberg, Synops. Faun. Scand. vol. i. pt. ii. Aves, 1828, p. 166.

Type (by subsequent designation) : *I. minutus* (Linné).

Ixobrychus minutus novæzelandiæ (Potts). New Zealand Little Bittern.

Ardeola novæzelandiæ Potts, Trans. New Zeal. Inst. vol. iii. 1871, p. 99: Westland, South Island.

Synonym:—

Ardetta pusilla Buller, Suppl. vol. i. p. 197. [The type-locality of *Ardea minuta* Linné, Syst. Nat. 12th ed. 1766, p. 240, is Switzerland, Europe, and of *Ardea pusilla* Vieillot, Nouv. Dict. d'Hist. Nat. vol. xiv. 1817, p. 432, is New South Wales.]

Range:—South Island (breeding).

Genus BOTAURUS.

Botaurus Stephens in Shaw's Gen. Zool. vol. xi. pt. ii. 1819, p. 592.

Type (by subsequent designation): *B. stellaris* (Linné).

Botaurus poiciloptilus melanotus Gray. New Zealand Black-backed Bittern.

Botaurus melanotus Gray, in Dieffenbach's Travels in New Zeal. vol. ii. 1843, p. 196: New Zealand.

Synonym:—

Botaurus pœciloptilus Buller, Suppl. vol. i. p. 199. [The type-locality of *Ardea poiciloptila* Wagler, Syst. Avium, *Ardea*, sp. 28, note, 1827, is New South Wales.]

Range:—Both Islands (breeding).

Note:—Legge (Proc. Austr. Assoc. Adv. Sci. for 1904, 1905, p. 231) wrote: "*Botaurus* is represented in that country (New Zealand) by an endemic species, *Botaurus novæzealandiæ.*" This is apparently a *nomen nudum,* due to a *lapsus.*

Order ANSERIFORMES.

Family ANATIDÆ.

Genus DENDROCYGNA.

Dendrocygna Swainson, Classif. Birds, vol. ii. 1837, p. 365.

Type (by monotypy): *D. javanica* (Horsfield).

Dendrocygna eytoni munna Mathews. Whistling Duck.

Dendrocygna eytoni munna Mathews, Austral Av. Rec. vol. i. 1912, p. 86 : Queensland.

Synonym :—

Dendrocygna eytoni Buller, Suppl. vol. ii. p. 1. [The type locality of *Leptotarsis eytoni* Eyton, Monogr. Anatidæ, 1838, p. 111, is north-western Australia.]

Range :—New Zealand (accidental visitor, few occurrences); extralimital.

Genus CASARCA.

Casarca Bonaparte, Comp. List Birds Europe and North America, 1838, p. 56.

Type (by monotypy) : *C. ferruginea* (Vroeg).

Casarca variegata (Gmelin). Paradise Duck.

Anas variegata Gmelin, Syst. Nat. 1789, p. 505 : Dusky Sound, South Island.

Synonyms :—

Casarka castanea Eyton, Monogr. Anatidæ, 1838, p. 108, pl. 10 : Dusky Sound, South Island.
Anas cheneros Forster, Descr. Anim. ed. Licht. 1844, p. 92 : Dusky Sound, South Island.
Casarca variegata Buller, Suppl. vol. ii. p. 2.

Range :—Both Islands (breeding).

Genus ANAS.

Anas Linné, Syst. Nat. 10th ed. 1758, p. 122.

Type (by subsequent designation) : *A platyrhynchos* Linné.

Anas superciliosa superciliosa Gmelin. Grey Duck.

Anas superciliosa Gmelin, Syst. Nat. 1789, p. 537 : Dusky Sound, South Island.

Synonyms :—

Anas leucophrys Forster, Descr. Anim. ed. Licht. 1844, p. 93 : Dusky Sound, South Island.
Anas superciliosa Buller, Suppl. vol. ii. p. 5.

Range :—Both Islands (breeding).

Genus NETTION.

Nettion Kaup. Skizz. Entwick.-Gesch. Nat. Syst. 1829, p. 95.

Type (by monotypy): *N. crecca* (Linné).

Nettion castaneum (Eyton). Australian Teal.

Mareca castanea Eyton, Monogr. Anatidæ, 1838, p. 119: New South Wales.

Synonyms:—

Anas gracilis Buller, Ibis, 1869, p. 41: Manawatu, North Island, New Zealand.
Nettium castaneum Buller, Suppl. vol. ii. p. 10.
Nettium gibberifrons Buller, Suppl. vol. ii. p. 10.

Range:—New Zealand (accidental visitor, few occurrences); extralimital.

Note.—We have been unable to satisfy ourselves of the occurrence of *N. gibberifrons* Müller (Verh. Nat. Gesch. Land- en Volkenk. 1842, p. 159: Celebes) either in Australia or New Zealand. The only New Zealand specimens available undoubtedly belong to the present species.

Genus NESONETTA.

Nesonetta Gray, Genera Birds, vol. iii. 1844, p. 627.

Type (by original designation): *N. aucklandica* Gray.

Nesonetta aucklandica Gray. Auckland Islands' Duck.

Nesonetta aucklandica Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 16: Auckland Islands.

Synonym:—

Nesonetta aucklandica Buller, Suppl. vol. ii. p. 14.

Range:—Auckland Islands (breeding).

Genus ELASMONETTA.

Elasmonetta Salvadori, Cat. Birds Brit. Mus. vol. xxvii. 1895, p. 287.

Type (by original designation): *E. chlorotis* (Gray).

Elasmonetta chlorotis (Gray). Brown Duck.

Anas chlorotis Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 15: New Zealand.

Synonym:—

Elasmonetta chlorotis Buller, Suppl. vol. ii. p. 11.

Range:—Both Islands (breeding).

Genus SPATULA.

Spatula Boie, Isis, 1822, p. 564.

Type (by monotypy): *S. clypeata* (Linné).

Spatula rhynchotis variegata Gould. New Zealand Shoveller.

Spatula variegata Gould, Proc. Zool. Soc. Lond. 1856, p. 95: New Zealand.

Synonym:—

Spatula variegata Buller, Suppl. vol. ii. p. 15. [The type-locality of *Anas rhynchotis* Latham, Index Ornith. Suppl. 1801, p. lxx, is New South Wales.]

Range:—Both Islands (breeding).

Genus NYROCA.

Nyroca Fleming, Philos. Zool. vol. ii. 1822, p. 260.

Type (by tautonymy): *N. nyroca* (Güldenstadt).

Nyroca australis Eyton. Australian White-eyed Duck.

Nyroca australis Eyton, Monogr. Anatidæ, 1838, p. 160: New South Wales.

Synonym:—

Aythya australis Buller, Suppl. vol. ii. p. 16. [The type-locality of *Anas nyroca* Güldenstadt, Nov. Comm. Acad. Petrop. vol. xiv. pt. i. 1769, p. 403, is South Russia.]

Range:—New Zealand (accidental visitor, few occurrences); extralimital.

Genus FULIGULA.

Fuligula Stephens in Shaw's Gen. Zool. vol. xii. pt. ii. 1824, p. 187.

Type (by tautonymy): *F. fuligula* (Linné).

Fuligula novæseelandiæ (Gmelin). New Zealand Scaup.

Anas novæseelandiæ, Gmelin, Syst. Nat. 1789, p. 541 : Dusky Sound, South Island.

Synonyms :—

Anas atricilla Forster, Descr. Anim. ed. Licht. 1844, p. 95 : Dusky Sound, South Island.

Fuligula novæzealandiæ Buller, Suppl. vol. ii. p. 17.

Range :—Both Islands (breeding).

Genus HYMENOLAIMUS.

Hymenolaimus, Gray, Ann. & Mag. Nat. Hist. vol. xi. 1843, p. 370.

Type (by monotypy) : *H. malacorhynchos* (Gmelin).

Hymenolaimus malacorhynchos (Gmelin). Mountain Duck.

Anas malacorhynchos Gmelin, Syst. Nat. 1789, p. 526 : Dusky Sound, South Island.

Synonyms :—

Malacorhynchus forsterorum Wagler, Isis, 1832, p. 1235 : new name for *A. malacorhynchos* Gmelin.

Hymenolæmus malacorhynchus Buller, Suppl. vol. ii. p. 17.

Range :—Both Islands (breeding).

Genus PROMERGUS, nov.

Differs from the genus *Mergus* (type *M. merganser* Linné) in its longer and more slender bill and shorter toes, but especially in having the sexes alike in coloration ; in *Mergus* the depth of the culmen at the frontal feathers is more than one-third its length, while in *Promergus* the depth is less than one-fourth the length.

Type : *P. australis* (Hombron & Jacquinot).

Promergus australis (Hombron & Jacquinot). Auckland Islands' Merganser.

Mergus australis Hombron & Jacquinot, Ann. Sci. Nat. Paris, 2nd ser. vol. xvi. 1841, p. 320 : Auckland Islands.

Synonym :—

Merganser australis Buller, Suppl. vol. ii. p. 21.

Range :—Auckland Islands (breeding).

Order PELECANIFORMES.

Family CARBONIDÆ.

Genus CARBO.

Carbo Lacepède, Tableau Oiseaux, 1799, p. 15.
Type (by tautonymy) : *C. carbo* Linné.

Carbo carbo steadi, subsp. n. Black Shag.

Synonym :—

Phalacrocorax novæhollandiæ Buller, Suppl. vol. ii. p. 22. [The type-locality of *Pelecanus carbo* Linné, Syst. Nat. 10th ed. 1758, p. 133, is Sweden, and of *Phalacrocorax novæhollandiæ* Stephens in Shaw's Gen. Zool. vol. xiii. 1826, p. 93, is Tasmania.]

Range :—New Zealand (breeding).

Note :—*C. c. steadi* is easily separated from typical *C. c. carbo* by the scant white neck-feathers of the summer plumage as well as by size ; compared with *C. c. novæhollandiæ*, the nearest breeding subspecies of *C. carbo*, it is smaller in every dimension. Average measurements *C. c. novæhollandiæ* : culmen 66 mm., wing 345 ; average measurements *C. c. steadi* : culmen 59 mm., wing 325. Type in the British Museum.

Genus HYPOLEUCUS.

Hypoleucus Reichenbach, Nat. Syst. Vögel, 1852, p. vii.
Type (by original designation) : *H. varius* (Gmelin).

Hypoleucus varius varius (Gmelin). Pied Shag.

Pelecanus varius Gmelin, Syst. Nat. 1789, p. 576 : Queen Charlotte's Sound, South Island.

Synonyms :—

Pelecanus pica Forster, Descr. Anim. ed. Licht. 1844, p. 104 : same locality.

Carbo fucosus Peale, U.S. Expl. Exped., Birds, 1848, p. 268 : Bay of Islands, North Island.

Phalacrocorax varius Buller, Suppl. vol. ii. p. 24.

Range :—Both Islands (breeding).

Hypoleucus carunculatus carunculatus (Gmelin). Rough-faced Shag.

Pelecanus carunculatus Gmelin, Syst. Nat. 1789, p. 576 : Queen Charlotte's Sound, South Island.

Synonyms :—

? *Pelecanus cirrhatus* Gmelin, Syst. Nat. 1789, p. 576 : same locality.

? *Carbo purpurascens* Brandt, Bull. Sci. Acad. Imp. St. Pétersb. vol. iii. 1837, p. 56 : loc. unknown.

Phalacrocorax carunculatus, Buller, Suppl. vol. ii. p. 25.

Range :—North of South Island (breeding).

Hypoleucus carunculatus onslowi (Forbes). Pitt Island Shag.

Phalacrocorax onslowi Forbes, Ibis, 1893, p. 533 : Chatham Islands.

Synonyms :—

Phalacrocorax rothschildi, Forbes, Ibis, 1893, p. 537 : same locality.

Phalacrocorax onslowi Buller, Suppl. vol. ii. p. 37.

Range :—Chatham Islands (breeding).

Hypoleucus carunculatus traversi (Rothschild). Macquarie Island Shag.

Phalacrocorax traversi Rothschild, Bull. Brit. Orn. Club, vol. viii. 1904, p. xxi : Macquarie Island.

Synonym :—

Phalacrocorax traversi Buller, Suppl. vol. ii. p. 40.

Range :—Macquarie Island, Auckland Islands (breeding).

Hypoleucus campbelli campbelli (Filhol). Campbell Island Shag.

Urile campbelli Filhol, Bull. Soc. Philom. vol. ii. pt. 2, 1878, p. 132 : Campbell Island.

Synonym :—

Phalacrocorax campbelli Buller, Suppl. vol. ii. p. 39.

Range :—Campbell Island (breeding).

Hypoleucus campbelli colensoi (Buller). Auckland Islands' Shag.

Phalacrocorax colensoi Buller, Birds New Zeal. 2nd ed. vol. ii. 1888, p. 161 : Auckland Islands.

Synonym :—

Phalacrocorax colensoi Buller, Suppl. vol. ii. p. 28.

Range :—Auckland Islands (breeding).

Hypoleucus campbelli ranfurlyi (Grant). Bounty Islands' Shag.

Phalacrocorax ranfurlyi Grant, Bull. Brit. Orn. Club, vol. xi. 1901, p. 66 : Bounty Islands.

Synonym :—

Phalacrocorax ranfurlyi Buller, Suppl. vol. ii. p. 40.

Range :—Bounty Islands (breeding).

Hypoleucus campbelli stewarti (Grant). Stewart Island Shag.

Phalacrocorax stewarti Grant, Cat. Birds Brit. Mus. vol. xxvi. 1898, p. 331 : Stewart Island.

Synonyms :—

? *Phalacrocorax huttoni* Buller, Birds New Zeal. 2nd ed. vol. ii. 1888, p. 174 : near Dunedin, South Island.
Phalacrocorax huttoni Buller, Suppl. vol. ii. p. 30.

Range :—Stewart Island (breeding) ; south of South Island.

Note :—Buller claimed the identity of Grant's *P. stewarti* with his prior *P. huttoni* : we have been unable to examine the type of the latter, which is preserved in the Museum at Dunedin, New Zealand; there is nothing in Buller's description to indicate what bird he described, and until the type is re-examined *P. huttoni* must remain in suspense as indeterminable.

Hypoleucus chalconotus (Gray). Bronze Shag.

Graculus chalconotus Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 20 : Otago, South Island.

Synonyms:—

Phalacrocorax glaucus Jacquinot & Pucheran, Voy. Pôle Sud, Zool. vol. iii. 1853, p. 127, pl. 31. fig. 1: Otago, South Island.

Phalacrocorax chalconotus Buller, Suppl. vol. ii. p. 33.

Range:—Stewart Island (breeding); south of South Island.

Note:—This puzzling form appears to us to present another of the melanisms for which the southern parts of New Zealand are noted: that is, we believe that it is a fixed "melanistic" form of the preceding bird. Since arriving at that conclusion we find that Captain Hutton wrote ('Emu,' vol. iii. 1903, p. 5), "*P. chalconotus* is entirely black, but as the colours of the skin on the face and gular pouch are exactly like those of *P. stewarti*, I look upon it as a black descendant of that species, especially as it has occasionally white feathers on its lower surface."

Genus STICTOCARBO.

Stictocarbo Bonaparte, C. R. Acad. Sci. Paris, vol. xli. 1855. p. 1115.

Type (by subsequent designation): *S. punctatus* (Sparrman).

Stictocarbo punctatus (Sparrman). Spotted Shag.

Pelicanus punctatus Sparrman, Mus. Carlson. fasc. i. 1786, no. x.: Queen Charlotte's Sound, South Island.

Synonyms:—

Pelecanus nævius Gmelin, Syst. Nat. 1789, p. 575: same locality.

Hydrocorax dilophus Vieillot, Nouv. Dict. d'Hist. Nat. vol. viii. 1817, p. 85: new name for *P. nævius* Gmelin.

Phalacrocorax punctatus Buller, Suppl. vol. ii. p. 35.

Range:—Both Islands (breeding).

Stictocarbo featherstoni (Buller). Chatham Islands' Shag.

Phalacrocorax featherstoni Buller, Ibis, 1873, p. 90: Chatham Islands.

Synonym:—

Phalacrocorax featherstoni Buller, Suppl. vol. ii. p. 36.

Range:—Chatham Islands (breeding).

Genus MICROCARBO.

Microcarbo Bonaparte, C. R. Acad. Sci. Paris, vol. xliii. 1856, p. 577.

Type (by original designation): *M. pygmæus* (Gmelin).

Microcarbo melanoleucos brevirostris (Gould). White-throated Shag.

Phalacrocorax brevirostris Gould, Proc. Zool. Soc. Lond. 1837, p. 26: New Zealand.

Synonyms:—

Carbo flavagula Peale, U.S. Expl. Exped., Birds, 1848, p. 270: Bay of Islands, North Island.

Phalacrocorax brevirostris, Buller, Suppl. vol. ii. p. 42.

Phalacrocorax melanoleucus id. ib. p. 44. [The type-locality of *Hydrocorax melanoleucos* Vieillot, Nouv. Dict. d'Hist. Nat. vol. viii. 1817, p. 88, is New South Wales.]

Range:—New Zealand (breeding).

Genus MESOCARBO, nov.

Type: *Carbo sulcirostris* Brandt.

The species of *Mesocarbo* differ from those of *Hypoleucus* in their shorter and more slender bills, their longer tails and more slender build: from those of *Microcarbo* in their longer and proportionately more slender bills as well as their proportionately shorter tails.

Mesocarbo ater purpuragula (Peale). Little Black Shag.

Carbo purpuragula Peale, U.S. Expl. Exped., Birds, 1848, p. 269: Manua Bay, North Island.

Synonym:—

Phalacrocorax sulcirostris Buller, Suppl. vol. ii. p. 41. [The type-locality of *Carbo ater* Lesson, Traité d'Orn. 1831, p. 604, is Shark's Bay, West Australia, and of *Carbo sulcirostris* Brandt, Bull. Sci. Acad. Imp. St. Pétersb. vol. iii. 1837, p. 56, is New South Wales.]

Range:—New Zealand (? North Island only), breeding.

Note:—The species and subspecies of New Zealand Shags are not yet well differentiated, especially those belonging to the genus *Hypoleucus*. Almost every island-breeding form has been named, some twice over. These can only be considered subspecies and seem very ill-defined at that, as two or even three of the "species" have been recorded from the same island; they are generally named from single specimens in poor plumage, and as no long series has yet been collected, their determination is quite perplexing. Two species have been admitted, *H. carunculatus* (Gmelin) and *H. campbelli* (Filhol), but there may be only one: the caruneulated forms may intergrade with those without caruncles. We have omitted *Microcarbo melanoleucus melanoleucus* (Vieillot), as we consider the specimens referred to that form to be simply *M. m. brevirostris* Gould, which is only subspecifically separable: these birds are very sedentary and are not wanderers to any extent.

Family PLOTIDÆ.

Genus PLOTUS.

Plotus Linné, Syst. Nat. 12th ed. 1766, p. 218.
Type (by monotypy): *P. anhinga* Linné.

Plotus novæhollandiæ novæhollandiæ Gould. South Australian Darter.

Plotus novæhollandiæ Gould, Proc. Zool. Soc. Lond. 1847, p. 34: South coasts of Australia.

Synonym:—

Plotus novæhollandiæ Buller, Suppl. vol. ii. p. 46.

Range:—New Zealand (accidental: one occurrence near Hokitika, South Island); extralimital.

Family SULIDÆ.

Genus SULA.

Sula Scopoli, Introd. Hist. Nat. 1777, p. 474.
Type (by tautonymy): *Sula piscator* (Linné).

Sula bassana serrator Gray. New Zealand Gannet.

Sula serrator Gray, Voy. 'Erebus' and 'Terror,' Birds, 1845, p. 19: New Zealand.

Synonyms :—

Sula plumigula Pelzeln, Ibis, 1873, p. 52 : New Zealand.

Sula serrator Buller, Suppl. vol. ii. p. 46. [The type-locality of *Sula bassana* Linné, Syst. Nat. 10th ed. 1758, p. 133, is Scotland.]

Range :—North Island (breeding) ; South Island.

Sula dactylatra personata Gould. Masked Gannet.

Sula personata Gould, Proc. Zool. Soc. Lond. 1846, p. 21 : North-eastern Australia.

Synonyms :—

Sula cyanops Buller, Suppl. vol. ii. p. 49. [The type-locality of *Sula dactylatra* Lesson, Traité d'Orn. 1831, p. 601, is Ascension Island ; this name has six years' priority over *Sula cyanops* Sundevall, Phys. Sällsk. Tidskr. (Lund) vol. i. 1837, p. 218, described from the same locality.]

Range :—Kermadec Islands (breeding).

Sula leucogaster plotus (Forster). Brown Gannet.

Pelecanus plotus Forster, Descr. Anim. ed. Licht. 1844, p. 275 : near New Caledonia.

Synonym :—

Sula sula Buller, Suppl. vol. ii. p. 50. [The type-locality of *Pelecanus leucogaster* Boddaert, Tabl. Pl. Enlum. 1783, p. 57, is Cayenne, and *P. sula* Linné, Syst. Nat. 12th ed. 1766, p. 218, proves to be synonymous with *P. piscator* Linné, Syst. Nat. 10th ed. 1758, p. 134.]

Range :—New Zealand (accidental visitor : one occurrence, Napier, North Island, July 1888 ; apparently a second, Bay of Islands, Proc. New. Zeal. Inst. for 1910, 1911, p. 80) ; extralimital.

Family FREGATIDÆ.

Genus FREGATA.

Fregata Lacepède, Tableau Oiseaux, 1799, p. 15.

Type (by monotypy) : *F. aquila* (Linné).

Fregata aquila palmerstoni (Gmelin). Eastern Tropic Bird.

Pelecanus palmerstoni Gmelin, Syst. Nat. 1789, p. 573 : Palmerston Island, Pacific Ocean.

Synonym :—

Fregata aquila Buller, Suppl. vol. ii. p. 50. [The type-locality of *Pelecanus aquilus* Linné, Syst. Nat. 10th ed. 1758, p. 133, is Ascension Island, Atlantic Ocean.]

Range :—New Zealand (accidental visitor: about three occurrences: Castle Point, Wellington, Feb. 1863; Cape Farewell Light, South Island, April 15, 1901; Westport, South Island, before May 1903); extralimital.

Fregata ariel ariel (Gould). Lesser Frigate Bird.

Attagen ariel Gould, Birds Austr. vol. vii. 1848, pl. 72: Raine Island, North Australia.

Synonym :—

Fregata ariel Buller, Suppl. vol. ii. p. 52.

Range :—New Zealand (accidental visitor: one occurrence, Whakapuaka Bay, Nelson, 1855); extralimital.

Note :—There has been so much confusion with these two species that it is desirable that this specimen, which is still preserved in the Nelson Museum (*fide* Buller), should be examined.

Family PHAETHONTIDÆ.

Genus PHAETHON.

Phaethon Linné, Syst. Nat. 10th ed. 1758, p. 134.

Type (by subsequent designation): *P. æthereus* Linné.

Phaethon rubricauda novæhollandiæ Brandt. Ruddy Tropic Bird.

Phaethon novæhollandiæ Brandt, Mém. Acad. Sci. St. Pétersb. ser. 6, vol. v. 1840, pl. ii. p. 272: Lord Howe Island.

Synonyms :—

Phaethon rubricauda erubescens Rothschild, Avif. Laysan, 1900, pl. iii. p. 296: Kermadec Islands.

Phaethon rubricauda Buller, Suppl. vol. ii. p. 53. [The type-locality of *Phaethon rubricauda* Boddaert, Tabl. Planch. Enl. 1783, p. 57, no. 979, is Mauritius.]

Range :—Kermadec Islands (breeding); extralimital.

Family PELECANIDÆ.

Genus PELECANUS.

Pelecanus Linné, Syst. Nat. 10th ed. 1758, p. 132.
Type (by tautonymy): *P. onocrotalus* Linné.

Pelecanus conspicillatus conspicillatus Temminck. Eastern Australian Pelican.

Pelecanus conspicillatus Temminck & Laugier, Planch. Color. d'Ois. 47ᵉ livr. 1824, pl. 276: New South Wales.

Synonyms:—

Pelecanus australis Stephens in Shaw's Gen. Zool. vol. xiii. 1826, p. 113: New South Wales.
Pelecanus conspicillatus Buller, Suppl. vol. ii. p. 53.

Range:—New Zealand (accidental visitor: one occurrence, Wanganui River, North Island, 1890); extralimital.

Order ACCIPITRIFORMES.

Family FALCONIDÆ.

Genus CIRCUS.

Circus Lacepède, Tableau Oiseaux, 1799, p. 4.
Type (by subsequent designation): *C. æruginosus* (Linné).

Circus approximans drummondi, subsp. n. New Zealand Harrier.

Synonym:—

Circus gouldi Buller, Suppl. vol. ii. p. 54. [The type-locality of *Circus approximans* Peale, U.S. Expl. Exped. 1848, p. 64, is Fiji Islands, and of *Circus gouldi* Bonaparte, Consp. Gen. Av. vol. i. 1850, p. 34, is New South Wales.]

Range:—New Zealand (breeding).

Note:—*Circus approximans drummondi* is separable from *C. a. approximans* by its larger size, and from *C. a. gouldi* by its smaller size and darker coloration. Wing less than 398 mm.

Genus NESIERAX.

Nesierax Oberholser, Proc. Acad. Nat. Sci. Philad. 1899, p. 203.

Type (by original designation): *N. novæseelandiæ* (Gmelin).

Nesierax novæseelandiæ (Gmelin). Quail Hawk.

Falco novæseelandiæ Gmelin, Syst. Nat. 1788, p. 268: Queen Charlotte Sound, South Island.

Synonyms:—

Falco harpe Forster, Descr. Anim. ed. Licht. 1844, p. 68: Queen Charlotte Sound, South Island.

Nesierax novæzealandiæ Buller, Suppl. vol. ii. p. 58.

Range:—Both Islands (breeding).

Nesierax pottsi, sp. n. Bush Hawk.

Synonyms:—

Falco brunnea (not Bechstein, 1805) Gould, Synops. Birds Austr. pt. iii. 1838, p. 42: New Zealand.

Falco australis (not Gmelin, 1788) Hombron & Jacquinot, Annal. Sci. Nat. Paris, 2nd ser. vol. xvi. 1841, p. 312: Otago, South Island.

Falco ferox (not Gmelin, 1788) Peale, U.S. Expl. Exped. 1848, p. 67: Bay of Islands, North Island.

Nesierax australis Buller, Suppl. vol. ii. p. 59.

Range:—Both Islands (breeding).

Note:—Many good ornithologists have maintained that two species of *Nesierax* inhabit New Zealand. We are unable to settle the question, but find the presumed smaller form to be nameless. In providing the above name we select as type the smallest bird measured by us, which fortunately comes from the North Island, viz. Paroah Bay, and has a wing measurement of 230 mm. This small form does not differ in coloration from *N. novæseelandiæ* (Gmelin), and if later investigation proves that the smaller species is not existent, as we anticipate, we also suggest that the North Island form will prove separable from the South Island one and the name here given will then be available for that. We have named the species to honour

Mr. T. H. Potts, the greatest field-ornithologist New Zealand has yet seen, and who always contended that there were two species of *Nesierax* living together in New Zealand.

Genus CERCHNEIS.

Cerchneis Boie, Isis, 1826, p. 970.
Type (by monotypy): *C. rupicola* (Lichtenstein).

Cerchneis cenchroides cenchroides (Vigors & Horsfield). Nankeen Kestrel.

Falco cenchroides Vigors & Horsfield, Trans. Linn. Soc. Lond. vol. xv. 1826, p. 183: New South Wales.

Synonyms:—

Cerchneis immaculatus Bonaparte, Consp. Gen. Av. vol. i. 1850, p. 27: New South Wales.
Cerchneis cenchroides Buller, Suppl. vol. ii. p. 60.

Range:—New Zealand (accidental visitor: two occurrences: Waimatee, Canterbury, about 1889; Portland Island, North Island, 6 April 1895); extralimital.

Order STRIGIFORMES.

Family BUBONIDÆ.

Genus SPILOGLAUX.

Spiloglaux Kaup, Isis, 1848, p. 768.
Type (by subsequent designation): *S. boobook* (Latham).

Spiloglaux novæseelandiæ novæseelandiæ (Gmelin). South Island Morepork Owl.

Strix novæseelandiæ Gmelin, Syst. Nat. 1788, p. 296: Queen Charlotte's Sound, South Island.

Synonyms:—

Strix fulva Latham, Index Ornith. vol. i. 1790, p. 65: Queen Charlotte's Sound, South Island.
Noctua zelandica Quoy & Gaimard, Voy. de l'Astrol., Zool. vol. i. 1830, p. 168, pl. 2, fig. 1: Tasman Bay, South Island.
Ninox novæzealandiæ Buller, Suppl. vol. ii. p. 61 (part.).

Range:—South Island (breeding).

Spiloglaux novæseelandiæ venatica (Peale). North Island Morepork Owl.

Noctua venatica Peale, U.S. Expl. Exped., Birds, 1848, p. 75 : Bay of Islands, North Island.

Synonym :—

Ninox novæzealandiæ Buller, Suppl. vol. ii. p. 61 (part.).

Range :—North Island (breeding).

Genus SCELOGLAUX.

Sceloglaux Kaup, Isis, 1848, p. 768.

Type (by monotypy) : *S. albifacies* (Gray).

Sceloglaux albifacies albifacies (Gray). South Island Laughing Owl.

Athene albifacies Gray, Voy. 'Erebus' and 'Terror,' Birds, 1844, p. 2 : Waikouaiti, South Island.

Synonyms :—

Strix haastii Buller, Essay New Zeal. Orn. 1865, p. 7 : Canterbury, South Island.

Athene ejulans Potts, Trans. New Zeal. Inst. vol. iii. 1870, p. 63 : new name for *S. albifacies.*

Sceloglaux albifacies Buller, Suppl. vol. ii. p. 62.

Range :—South Island (breeding).

Sceloglaux albifacies rufifacies (Buller). North Island Laughing Owl.

Sceloglaux rufifacies Buller, Ibis, 1904, p. 639 : Wairarapa, North Island.

Synonym :—

Sceloglaux rufifacies Buller, Suppl. vol. ii. p. 65.

Range :—North Island (? extinct).

Order PSITTACIFORMES.

Family NESTORIDÆ.

Genus NESTOR.

Nestor Lesson, Traité d'Ornith. 1830, p. 190.

Type (by monotypy) : *N. meridionalis* (Gmelin).

Nestor meridionalis meridionalis (Gmelin). South Island Kaka Parrot.

Psittacus meridionalis Gmelin, Syst. Nat. 1788, p. 333: Dusky Sound, South Island.

Synonyms:—

Psittacus nestor Latham, Index Ornith. vol. i. 1790, p. 110: same locality.

Psittacus australis Shaw, Museum Lever. 1792, p. 87: same locality.

Nestor novæzelandiæ Lesson, Traité d'Ornith. 1830, p. 191: same locality.

Nestor hypopolius Wagler, Abhandl. Akad. Wissen. Münch. vol. i. 1832, pp. 505, 696: same locality.

Nestor esslingii Souancé, Rev. Mag. de Zool. 1856, p. 223: loc. ? (probably Marlborough District, South Island).

Nestor superbus Buller, Essay New Zeal. Ornith. 1865, p. 11: Alpine districts, South Island.

Nestor montanus Finsch, Papageien, vol. ii. 1868, p. 961: Alpine heights of South Island.

Nestor occidentalis Buller, Ibis, 1869, p. 40: not far from Dusky Sound, South Island.

Nestor meridionalis Buller, Suppl. vol. ii. p. 69.

Nestor esslingi id. ib. p. 77.

Range:—South Island (breeding).

Nestor meridionalis septentrionalis Lorenz. North Island Kaka Parrot.

Nestor septentrionalis Lorenz, Verhandl. zool.-bot. Ges. Wien, 1896, p. 198: North Island.

Range:—North Island (breeding).

Note:—The forms of *Nestor meridionalis* would provide an interesting study were localised series ever available. Much variation has been observed by every writer, but no attempt has been made to account for it in a scientific manner. It will be noticed that the Alpine districts of the South Island have provided most of the forms, the point of interest being that the type-locality of *Nestor meridionalis* was never fixed. Buller noted that *N. montanus* was larger and seemed very distinct, but overlooked the fact that it was practically the typical bird, and that the other bird (the North-Island form) needed the new name. Lorenz pointed this out, and then Buller would not recognise Lorenz's name but wished to utilise for the North Island race his own name of *N. occidentalis* given to the absolutely typical bird. Buller also admitted the beautiful colour aberration, *N. esslingi*, as a valid species, but of course it is impossible to allow this. It may be, however, that a recognisable race with a strong tendency to albinism does inhabit the Marlborough District, but without a series of specimens no progress whatever can be made in this most attractive field.

Nestor notabilis Gould. Kea Parrot.

Nestor notabilis Gould, Proc. Zool. Soc. Lond. 1856, p. 941 : Murihuki, South Island.

Synonym :—

Nestor notabilis Buller, Suppl. vol. ii. p. 75.

Range :—South Island (breeding).

Family CACATUIDÆ.

Genus CYANORAMPHUS.

Cyanoramphus Bonaparte, Rev. Mag. de Zool. vol. vi. 1854, p. 153.

Type (by subsequent designation): *C. erythronotus* (Kuhl).

Cyanoramphus novæzelandiæ novæzelandiæ (Sparrman). Red-fronted Parrakeet.

Psittacus novæzelandiæ Sparrman, Mus. Carlson. fasc. ii. 1787, no. xxviii. : Dusky Sound, South Island.

Synonyms :—

Lathamus sparmanii Lesson, Traité d'Ornith. 1830, p. 206 : same locality.

Cyanoramphus frontatus Bonaparte, Naumannia, 1856, Consp. Psitt. n. 188, nom. nud.

Cyanoramphus novæguinea id. ib. 189, nom. nud.

Platycercus forsteri Finsch, Papageien, vol. ii. 1868, p. 287 : same locality.

Platycercus rowleyi Buller, Trans. New Zeal. Inst. vol. vii. 1875, p. 220 : North Canterbury, South Island.

Cyanorhamphus novæzealandiæ Buller, Suppl. vol. ii. p. 83.

Range :—Both Islands (breeding).

Cyanoramphus novæzelandiæ hochstetteri (Reischek). Antipodes Island Red-fronted Parrakeet.

Platycercus hochstetteri Reischek, Trans. New Zeal. Inst. vol. xxi. 1889, p. 387: Antipodes Island.

Range:—Antipodes Island (breeding).

Cyanoramphus novæzelandiæ aucklandicus Reichenow. Auckland Islands' Parrakeet.

Cyanorhamphus novæzeelandiæ subsp. *aucklandicus* Reichenow, Journ. für Orn. 1881, p. 42: Auckland Islands.

Synonyms:—

Cyanoramphus aucklandicus Bonaparte, Naumannia, 1856, Consp. Psitt. p. 190, nom. nud.

Cyanoramphus erythrotis Buller, Suppl. vol. ii. p. 86 (part.).

Range:—Auckland Islands (breeding).

Cyanoramphus novæzelandiæ erythrotis (Wagler). Macquarie Islands' Parrakeet.

Platycercus erythrotis Wagler, Abhandl. Akad. Wissen. Münch. vol. i. 1832, p. 526: Macquarie Islands.

Range:—Macquarie Islands (breeding).

Cyanoramphus novæzelandiæ cyanurus Salvadori. Kermadec Islands' Parrakeet.

Cyanorhamphus cyanurus Salvadori, Ann. Mag. Nat. Hist. ser. 6, vol. vii. 1891, p. 68: Raoul Island.

Synonym:—

Cyanorhamphus cyanurus Buller, Suppl. vol. ii. p. 87.

Range:—Kermadec Islands (breeding).

Cyanoramphus unicolor (Lear). Antipodes Island Parrakeet.

Platycercus unicolor Lear, Illus. Psittac. pt. iv. Jan. 1831: Antipodes Islands.

Synonyms:—

Pezoporus fairchildii Hector, Trans. New Zeal. Inst. vol. xxvii. 1895, p. 285: same locality.

Cyanorhamphus unicolor Buller, Suppl. vol. ii. p. 81.

Range:—Antipodes Island (breeding).

Cyanoramphus auriceps auriceps Kuhl. South Island Yellow-fronted Parrakeet.

Psittacus auriceps Kuhl, Nova Acta Phys. Med. Acad. Cæs. Leop.-Carol. vol. x. 1820, p. 46: South Island.

Synonyms:—

Cyanorhamphus auriceps subsp. *intermedia* Reichenow, Journ. für Orn. 1881, p. 44: South Island.

Cyanorhamphus auriceps Buller, Suppl. vol. ii. p. 88.

Range:—South Island (breeding).

Cyanoramphus auriceps macleani, subsp. n. North Island Yellow-fronted Parrakeet.

Range:—North Island (breeding).

Note:—*Cyanoramphus auriceps macleani* differs in its much smaller size. Salvadori separated this form when he catalogued the birds in the British Museum, but did not name it. Type in the British Museum.

Cyanoramphus auriceps forbesi Rothschild. Chatham Islands' Yellow-fronted Parrakeet.

Cyanorhamphus forbesi Rothschild, Proc. Zool. Soc. Lond. 1893, p. 529: Chatham Islands.

Synonym:—

Cyanorhamphus forbesi Buller, Suppl. vol. ii. p. 89.

Range:—Chatham Islands (breeding).

Cyanoramphus malherbi Souancé. Orange-fronted Parrakeet.

Cyanoramphus malherbi Souancé, Rev. Mag. de Zool. 1857, p. 98: unknown = South Island.

Synonyms:—

Platycercus alpinus Buller, Ibis, 1869, p. 39: alpine heights of South Island.

Cyanorhamphus malherbei Buller, Suppl. vol. ii. p. 89.

Range:—South of South Island (breeding).

Family STRIGOPIDÆ.

Genus STRIGOPS.

Strigops Gray, Gen. Birds, vol. ii. 1845, p. 426.

Type (by monotypy): *S. habroptilus* Gray.

Strigops habroptilus habroptilus Gray. South Island Kakapo.

Strigops habroptilus Gray, Gen. Birds, vol. ii. 1845, p. 427, pl. cv.: Dusky Sound, South Island.

Synonyms:—

Strigops greyii Gray, Ibis, 1862, p. 230: colour aberration: South Island.

Stringops habroptilus, Buller, Suppl. vol. ii. p. 89.

Range:—South Island (breeding).

Strigops habroptilus innominatus, subsp. n. North Island Kakapo.

Range:—North Island (breeding).

Note:—The only specimen of the Kakapo we have seen from the North Island is considerably smaller than a long series from the South Island; as Buller noted (Birds New Zeal. 1873, p. 29, footnote) that the only North Island specimen he examined was also "very small, measuring only 21 inches in length, and 8·5 in the wing," we are adopting the extreme course and naming this race in the hope that our action will incite investigation. Inasmuch as the Kakapo is flightless, there is every reason to suggest that the birds inhabiting the two Islands should constitute recognisable races. Type in British Museum.

Strigops habroptilus parsonsi, subsp. n. Mountain Kakapo.

Range:—South Island: Alpine heights of north-west.

Note:—This is an extremely large form living in the mountains of the north-west of the South Island; it has a wing measurement of 335 mm., which is not approached by any of the Dusky Sound birds. Type in Coll. G. M. Mathews *.

Order CORACIIFORMES.

Family APODIDÆ.

Genus CHÆTURA.

Chætura Stephens in Shaw's Gen. Zool. vol. xiii. 1826, p. 76.

Type (by subsequent designation): *C. pelagica* (Linné).

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* In the Vienna Museum is a long series of birds collected by Reischek at Dusky Sound. He maintains that the birds collected on the heights were larger and lighter than those living at or about sea-level.

Chætura caudacuta caudacuta (Latham). Spine-tailed Swift.

Hirundo caudacuta Latham, Index Ornith. Suppl. 1801, p. lvii : New South Wales.

Synonyms :—

Hirundo fusca Stephens in Shaw's Gen. Zool. vol. x. 1817, p. 133: New South Wales.
Chætura australis id. ib. vol. xiii. 1826, p. 76 : New South Wales.
Hirundo ciris Pallas, Zoogr. Rosso-Asiat. vol. i. 1827, p. 541: Siberia.
Chætura macroptera Swainson, Zool. Illus. ser. ii. 1829, pl. 42 : New South Wales.
Chætura caudacuta Buller, Suppl. vol. ii. p. 95.

Range :—New Zealand (accidental visitor; one occurrence, Manaia, North Island, March 1888) ; extralimital.

Genus APUS.

Apus Scopoli, Introd. Hist. Nat. 1777, p. 483.
Type (by monotypy) : *A. apus* (Linné).

Apus pacificus (Latham). White-rumped Swift.

Hirundo pacificus Latham, Index Ornith. Suppl. 1801, p. lviii : New South Wales.

Synonyms :—

Cypselus australis Gould, Proc. Zool. Soc. Lond. for 1839, 1840, p. 141 : New South Wales.
Cypselus vittatus Jardine & Selby, Illus. Ornith. vol. iv. 1840, text to pl. 39 : China.
Cypselus pacificus Buller, Suppl. vol. ii. p. 95.

Range :—New Zealand (accidental visitor : one occurrence, near New Plymouth, North Island, Dec. 1844) ; extralimital.

Family CORACIIDÆ.

Genus EURYSTOMUS.

Eurystomus Vieillot, Analyse nouv. Ornith. 1816, p. 37.
Type (by monotypy) : *E. orientalis* (Gmelin).

Eurystomus orientalis pacificus (Latham). Australian Roller.

Coracias pacifica Latham, Index Ornith. Suppl. 1801, p. xxvii : New South Wales.

Synonyms :—

Eurystomus australis Swainson, Anim. in Menag. 1837, p. 326: New South Wales.

Eurystomus australis Buller, Suppl. vol. ii. p. 96.

Range: New Zealand (accidental visitor, few occurrences); extralimital.

Family ALCEDINIDÆ.

Genus SAUROPATIS.

Sauropatis Cabanis & Heine, Mus. Hein. vol. ii. 1860, p. 152.

Type (by subsequent designation): *S. sanctus* (Vigors & Horsfield).

Sauropatis sanctus vagans (Lesson). North Island Kingfisher.

Alcedo vagans Lesson, Voy. de la Coquille, Zool. vol. i. 1830, p. 694: Bay of Islands, North Island.

Synonyms :—

? *Halcyon norfolkiensis* Tristram, Ibis, 1885, p. 49: Norfolk Island.

Halcyon vagans Buller, Suppl. vol. ii. p. 97 (part).

Range :—North Island (breeding); Kermedec Group (breeding); ? Norfolk Island (breeding); Lord Howe Island (breeding).

Sauropatis sanctus forsteri, subsp. n. South Island Kingfisher.

Synonyms :—

Alcedo cyanea (not of Vieillot 1818) Forster, Descr. Anim. ed. Licht. 1844, p. 76: Dusky Sound, South Island.

Halcyon vagans Buller, Suppl. vol. ii. p. 97 (part). [The type-locality of *Halcyon sanctus* Vigors & Horsfield, Trans. Linn. Soc. Lond. vol. xv. 1826, p. 206, is New South Wales.]

Range :—South Island (breeding).

Note :—Differs from *S. s. vagans* in its longer and narrower bill. Type in the British Museum.

Order COCCYGES.

Family CUCULIDÆ.

Genus CUCULUS.

Cuculus Linné, Syst. Nat. 10th ed. 1758, p. 110.
Type (by tautonymy): *C. canorus* Linné.

Cuculus optatus Gould. Oriental Cuckoo.

Cuculus optatus Gould, Proc. Zool. Soc. Lond. 1845, p. 18: Port Essington, North Australia.

Synonym:—

Cuculus saturatus Buller, Suppl. vol. ii. p. 102.

Range:—New Zealand (accidental visitor: one occurrence, Lake Te Anau, South Island, February 1902); extralimital.

Genus LAMPROCOCCYX.

Lamprococcyx Cabanis, Mus. Hein. vol. iv. 1862, p. 11.
Type (by original designation): *L. lucidus* (Gmelin).

Lamprococcyx lucidus (Gmelin). New Zealand Shining Cuckoo.

Cuculus lucidus Gmelin, Syst. Nat. 1788, p. 421: Queen Charlotte's Sound, South Island.

Synonyms:—

Cuculus nitens Forster, Descr. Anim. ed. Licht. 1844, p. 151: Queen Charlotte's Sound, South Island.
Chalcococcyx lucidus Buller, Suppl. vol. ii. p. 101.

Range:—New Zealand (breeding). Summer visitor to both Islands and to the Chatham Islands but winter quarters still unknown. (*Cf.* Mathews, Austral Avian Record, vol. i. 1912, pp. 15–16.)

Genus URODYNAMIS.

Urodynamis Salvadori, Ornith. Papua. e Mol. vol. i. 1880, p. 370.
Type (by original designation): *U. taitensis* (Sparrman).

Urodynamis taitensis (Sparrman). Long-tailed Cuckoo.

Cuculus taitensis Sparrman, Museum Carlson. fasc. ii. 1787, no. xxxii.: Tahiti.

Synonyms:—

Cuculus tahitius Gmelin, Syst. Nat. 1788, p. 412: Tahiti.
Cuculus perlatus Vieillot, Nouv. Dict. d'Hist. Nat. vol. viii. 1817, p. 232: Tahiti.
Cuculus fasciatus Forster, Descr. Anim. ed. Licht. 1844, p. 160: Tahiti.
Eudynamys cuneicauda Peale, United States Expl. Exped., Zool. 1848, p. 139: Fiji Islands (Ovalau).
Urodynamis taitensis Buller, Suppl. vol. ii. p. 98.

Range:—New Zealand (breeding). Summer visitor to both islands; extralimital.

Order PASSERIFORMES.

Family ACANTHISITTIDÆ.

Genus ACANTHISITTA.

Acanthisitta Lafresnaye, Mag. Zool. 1842, pl. 27.
Type (by monotypy): *A. chloris* (Sparrman).

Acanthisitta chloris chloris (Sparrman). South Island Rifleman.

Sitta chloris Sparrman, Museum Carlson. fasc. ii. 1787, no. xxxiii: Cape of Good Hope in error. We designate Dusky Sound, South Island.

Synonyms:—

Motacilla citrina Gmelin, Syst. Nat. 1789, p. 979: Dusky Sound, South Island.
Sitta punctata Quoy & Gaimard, Voy. de l'Astrol., Zool. vol. i. 1830, pl. 18, fig. 1, p. 221: Tasman Bay, South Island.
Acanthiza tenuirostris Lafresnaye, Revue Zool. 1841, p. 242: South Island.
Motacilla citrinella Forster, Descr. Anim. ed. Licht. 1844, p. 89: Dusky Sound, South Island.
Acanthidositta chloris Buller, Suppl. vol. ii. p. 102.
Acanthidositta citrina id. ib. p. 103.

Range:—South Island (breeding).

Acanthisitta chloris granti, subsp. n. North Island Rifleman.

Differs from *A. c. chloris* in lacking the yellow rump and the yellow coloration of the sides, flanks, and under tail-coverts.

Range:—North Island (breeding).

Note:—The nomenclature of this species has received severe handling without much benefit accruing to our knowledge. First as regards the generic name; it has been mutilated by would-be purists into *Acanthidositta*; this has been done through illogical attempts to force meanings out of names irrespective of the author's usage. Agassiz (Index Univ. p. 4, 1846) would appear to have been the first amender, but in the second edition of Buller's 'Birds' (p. 113) we get information for an independent attempt thus: "This has hitherto been written *Acanthisitta*, but Professor Newton has drawn my attention to the fact of its being erroneous. I have therefore adopted the more classic form of *Acanthidositta*, the etymology of which is ἀκανθιδ = crude form of ἀκανθις = *Carduelis*, and *Sitta* = *Sitta*." This absurd reasoning has been accepted by later writers; but what resemblance has this bird to *Carduelis*? Absolutely none. The facts are simple. Owing to its peculiar bill it was at first sight placed in the genus *Sitta* by Sparrman; when Lafresnaye described it as new, he called it *Acanthiza*; then, noting its generic distinction and the *Sitta*-like bill, he made a combination of *Acanthiza* and *Sitta*; this was quite a common practice of Lesson and other French ornithologists about that time and consequently no other derivation of the name is necessary than *Acanthiza* and *Sitta*. In a similar instance Lafresnaye provided *Procelsterna* from *Procellaria* and *Sterna*.

Now as to the family name. This species has been classed with *Xenicus* in the family *Xenicidæ*, but as Buller pointed out (Birds New Zeal. 2nd ed. vol. i. p. 108), if this is so the family name should be *Acanthisittidæ*, but he did not use it. We do not think that there is much relationship between *Acanthisitta* and *Xenicus*, and the researches of Pycraft also point to the same conclusion. We are, therefore, separating the two into different families. Regarding the species and subspecies of this family much remains to be worked out. Grant, in the Bull. Brit. Orn. Club, vol. xv. 1905, p. 82, and in the 'Ibis,' 1905, pp. 594–597, contended that two species were represented in the South Island to which he assigned the names *Acanthidositta chloris* (Sparrman) and *A. citrina* (Gmelin). Unfortunately, whatever the truth may be, Grant's nomenclature is inadmissible. In the first place, *Sitta chloris* Sparrman was inaccurately used: no type-locality was fixed for the species; Sparrman accompanied Captain Cook on his second voyage *in the pay of Forster,* who was official naturalist to the Voyage. Whatever birds Sparrman described must have been collected under Forster's supervision. We have, therefore, decided to fix as the type-locality of Sparrman's species that absolutely known from Forster's descriptions and figures. This is a very necessary duty, as Sparrman got his localities mixed up and described many New Zealand birds from "Cape of Good Hope"; this instance is one of them. Now, Forster described the present species from Dusky Sound, South Island, and we therefore select the same place as the type-locality of Sparrman's *Sitta chloris.* Grant received a bird from Dusky Sound, and observing it differed somewhat from the accepted *A. chloris,* recognised in it Gmelin's *M. citrina* from that locality, but Gmelin's name was founded on Latham's description, which in turn was based on Forster's specimen and consequently was identical with Sparrman's bird.

Grant noted that the Dusky Sound bird had "the rump and upper tail-coverts yellow" . . . . "sides, flanks and under tail-coverts bright yellow." Sparrman wrote, "Uropygium flavicans. Abdomen crissumque alba," and the figure shews a yellow rump and the lower under parts washed with *yellow.*

There can be no doubt that Grant's *A. citrina* is identical with Gmelin's *M. citrina,* and this is as surely Sparrman's *S. chloris.*

But Grant's *A. chloris* was mainly allotted to specimens from Marlborough and elsewhere, though some Marlborough birds were called *A. citrina*.

Buller in the 'Supplement,' however, used *A. chloris* for the North and South Island birds, and then admitted *A. citrina* for the Alpine Rifleman from the Alpine country of Nelson and quoted Grant as confirmation! We have not sufficient authentic material to decide as to the value of this Alpine race but are separating the North Island Rifleman, as the specimens from that Island lack the yellow rump and yellow on the under parts of the Dusky Sound bird, only a bare tinge of that colour being seen.

Family XENICIDÆ.

Genus XENICUS.

Xenicus Gray, Cat. Gen. Subgen. Birds, 1855, p. 31.

Type (by original designation): *X. longipes* (Gmelin).

Xenicus longipes longipes (Gmelin). South Island Bush Wren.

Motacilla longipes Gmelin, Syst. Nat. 1789, p. 979: Dusky Sound, South Island.

Synonym:—

Xenicus longipes Buller, Suppl. vol. ii. p. 104.

Range:—South Island (breeding).

Xenicus longipes stokesii Gray. North Island Bush Wren.

Xenicus stokesii Gray, Ibis, 1862, p. 219: Rimutaka Hills, North Island.

Synonym:—

Xenicus stokesi Buller, Suppl. vol. ii. p. 107.

Range:—North Island (breeding). ? Extinct.

Xenicus gilviventris Pelzeln. Alpine or Rock Wren.

Xenicus gilviventris Pelzeln, Verh. zool.-bot. Gesellsch. Wien, 1867, p. 316: New Zealand.

Synonyms:—

Xenicus haasti Buller, Ibis, 1869, p. 37: Canterbury Alps.
Xenicus gilviventris Buller, Suppl. vol. ii. p. 108.

Range:—Alps of South Island (breeding).

Genus TRAVERSIA.

Traversia Rothschild, Bull. Brit. Orn. Club, vol. iv. 1894, p. x.

Type (by monotypy): *T. lyalli* Rothschild.

Traversia lyalli Rothschild. Stephen's Island Wren.

Traversia lyalli Rothschild, Bull. Brit. Orn. Club, vol. iv. 1894, p. x: Stephen's Island.

Synonyms:—

Xenicus insularis Buller, Ibis, 1895, p. 236: Stephen's Island.
Traversia insularis Buller, Suppl. vol. ii. p. 109.

Range:—Stephen's Island, Cook's Strait. ? Extinct.

Family HIRUNDINIDÆ.

Genus HYLOCHELIDON.

Hylochelidon Gould, Handb. Birds Austr. vol. i. 1865, p. 111.

Type (by original designation): *H. nigricans* (Vieillot).

Hylochelidon nigricans nigricans (Vieillot). Australian Tree Swallow.

Hirundo nigricans Vieillot, Nouv. Dict. Hist. Nat. vol. xiv. 1817, p. 523: New South Wales.

Synonyms:—

Hirundo pyrrhonota Vigors & Horsfield, Trans. Linn. Soc. Lond. vol. xv. 1826, p. 190: New South Wales.
Collocalia arborea Gould, Birds Austr. vol. ii. pl. 14, 1848: New South Wales.
Petrochelidon nigricans Buller, Suppl. vol. ii. p. 113.

Range:—New Zealand (accidental visitor: few occurrences); extralimital.

Note:—All the specimens obtained should be re-examined, and it should be decided whether they all belong to the typical subspecies or whether some are referable to *H. n. australis* Temminck & Schlegel (Fauna Japonica, Aves, 1850, p. 35: Tasmania), the Tasmanian subspecies.

Family MUSCICAPIDÆ.

Genus MYIOMOIRA.

Myiomoira Reichenbach, Syst. Avium, 1850, tab. lxvii. Type (by monotypy) : *M. toitoi* (Lesson).

Myiomoira toitoi (Lesson). North Island Tomtit.

Muscicapa toitoi Lesson, Manuel d'Ornith. vol. i. 1828, p. 188 : North Island.

Synonym :—

Petrœca toitoi Buller, Suppl. vol. ii. p. 114.

Range :—North Island (breeding).

Myiomoira macrocephala macrocephala (Gmelin). South Island Tomtit.

Parus macrocephalus Gmelin, Syst. Nat. 1789, p. 1013 : Queen Charlotte's Sound, South Island.

Synonyms :—

Miro forsterorum Gray in Dieffenbach's Travels in New Zealand, vol. ii. 1843, p. 191 : same locality.

Turdus minutus Forster, Descr. Anim. ed. Licht. 1844, p. 83 : same locality.

Petrœca macrocephala Buller, Suppl. vol. ii. p. 114.

Range :—South Island (breeding).

Myiomoira macrocephala dieffenbachii (Gray). Chatham Islands' Tomtit.

Miro dieffenbachii Gray in Dieffenbach's Travels in New Zealand, vol. ii. 1843, p. 191 : Chatham Islands.

Range :—Chatham Islands (breeding).

Myiomoira macrocephala marrineri, subsp. n. Auckland Islands' Tomtit.

Differs from *M. m. macrocephala* in its larger size (*cf.* Grant, Ibis, 1905, p. 587). Type in the British Museum.

Range :—Auckland Islands (breeding).

Note :—In the Suppl. vol. ii. p. 117, Buller included, under the title *Petrœca vittata,* the record of a bird which Hutton had recognised as appearing to him to be *Muscicapa* *grisola*; as the skin is preserved in the Canterbury Museum it is imperative that a re-examination be made and the identity of the bird fixed. Buller's nomination was purely guesswork, as he had not seen the bird nor has any description been published.

MAORIGERYGONE, gen. nov.

Differs from *Pseudogerygone* in the extremely compressed bill, much longer tail, different wing formula, the fifth primary longest, and different style of coloration.

Type : *Curruca igata* Quoy & Gaimard.

Note :—*Gerygone* was introduced by Gould to replace *Psilopus* (preoccupied), proposed for *P. albogularis* Gould. Sharpe separated the somewhat heterogeneous assemblage into *Gerygone* and *Pseudogerygone,* the type of which latter he named *G. personata* Gould, and thereto attached the New Zealand birds. It is now necessary to subdivide *Pseudogerygone,* as the birds thereunder included have different structural characters as well as varied coloration. The New Zealand species are easily differentiated as above.

Maorigerygone igata igata (Quoy & Gaimard). South Island Grey Warbler.

Curruca igata Quoy & Gaimard, Voy. de l'Astrol., Zool. vol. i. 1830, p. 201, pl. xi. fig. 2 : Tasman Bay, South Island.

Synonym :—

Pseudogerygone flaviventris Buller, Suppl. vol. ii. p. 117 (part.).

Range :—South Island, breeding in the Lowlands.

Maorigerygone igata sylvestris (Potts). South Island Bush Warbler.

Gerygone sylvestris Potts, Trans. New Zeal. Inst. vol. v. 1873, p. 177 : near Lake Mapourika, South Island.

Synonym :—

Pseudogerygone sylvestris Buller, Suppl. vol. ii. p. 119.

Range :—South Island (breeding), south-western Alpine districts.

Maorigerygone igata flaviventris (Gray). North Island Grey Warbler.

Gerygone flaviventris Gray, Voy. 'Erebus' and 'Terror,' Birds, 1844, p. 5, pl. iv. fig. 1: Bay of Islands, North Island.

Synonyms:—

Gerygone assimilis Buller, Essay Ornith. New Zeal. 1865, p. 9, footnote: proposed on nest only: North Island.

Gerygone aucklandica Pelzeln, Reise Novara, Vögel, 1865, p. 65: Auckland, North Island.

Pseudogerygone flaviventris Buller, Suppl. vol. ii. p. 117 (part.).

Range:—North Island, breeding in the Lowlands.

Maorigerygone igata macleani (Grant). North Island Mountain Warbler.

Pseudogerygone macleani Grant, Ibis, 1907, p. 545: North-eastern portion of North Island, 2000 feet.

Range: – North-eastern North Island (breeding, 2000 feet).

Note:—In the Ibis, 1907, pp. 542–546, Grant wrote upon the New Zealand forms of the genus *Pseudogerygone* and admitted as distinct species the four we have here included, but which we consider subspecies only.

It is obvious that the plumage changes which this species undergoes are not yet clearly understood, and Grant's key on p. 543 confuses the breeding, winter, and immature plumages, and does not correctly define the differential characteristics of the forms. Much more material is necessary before these can be considered fixed, as Grant himself admits (*loc. cit.* pp. 543–4).

There is, however, little doubt that the Alpine heights of the south-west of the South Island harbour a distinct form from the Lowlands and these forms can carry the names here used. The North Island lowland form also appears to have a mountain representative in Grant's *P. macleani.* From Grant's paper it is obvious that the forms are so close that they can be considered as subspecies only and an examination of a series confirms that conclusion.

Genus HAPOLORHYNCHUS.

Hapolorhynchus Reichenow, Journ. für Orn. 1908, p. 488.
Type (by monotypy): *H. albofrontatus* (Gray).

Hapolorhynchus albofrontatus (Gray). Chatham Islands' Warbler.

Gerygone? albofrontata Gray, Voy. 'Erebus' and 'Terror,' Birds, 1844, p. 5: Chatham Islands.

Synonym:—

Pseudogerygone albofrontata Buller, Suppl. vol. ii. p. 119.

Range:—Chatham Islands (breeding).

Note:—When Gray introduced this species he noted that it was quite an aberrant *Gerygone,* and there can be no hesitation in using the generic name Reichenow has proposed for this species.

Genus MIRO.

Miro Lesson, Traité d'Ornith. 1830, p. 389.
Type (by monotypy): *M. longipes* (Lesson).

Miro australis australis (Sparrman). South Island Robin.

Turdus australis Sparrman, Museum Carlson. 1788, fasc. iii. no. lxix.: Dusky Sound, South Island.

Synonyms:—

Turdus albifrons Gmelin, Syst. Nat. 1789, p. 822: same locality.
Turdus ochrotarsus Forster, Descr. Anim. ed. Licht. 1844, p. 82; same locality.
Miro albifrons Buller, Suppl. vol. ii. p. 120.

Range: South Island, breeding in the Lowlands.

Miro australis bulleri Buller. Alpine Robin.

Miro bulleri Buller, Suppl. Birds New Zeal. 1906, vol. ii. p. 123: Karamea Saddle, South Island.

Range:—South Island (breeding). Alpine form.

Miro australis longipes (Lesson). North Island Robin.

Muscicapa longipes Lesson, Manuel d'Orn. 1828, vol. i. p. 248: Bay of Islands, North Island.

Synonyms :—

Myiothera novæ-zelandiæ id. ib.: new name for same bird.
Miro australis Buller, Suppl. vol. ii. p. 122.

Range :—North Island (breeding).

Note :—*Turdus australis* Sparrman, if used at all, must be used for the South Island Robin, as Sparrman was a colleague of Forster and was never in the North Island. The illustration is bad but recognisable as referring to this species, though the subspecific characters are not clearly shewn.

NESOMIRO, gen. nov.

The species of *Miro* are separated from those of *Petroica* on account of their much larger size, much stouter and longer bill and longer legs with different coloration ; the group here separated under the above name differ more from *Miro* than *Miro* does from *Petroica*, being much smaller than *Miro*, with a much shorter bill and shorter legs, and again different coloration. Compared with *Petroica* the species included in *Nesomiro* have much shorter bills, longer tails, though equivalent wing-length, and much stronger feet, though the metatarsus is of similar length ; the coloration is uniform black.

Type : *Miro traversi* Buller.

Nesomiro traversi traversi (Buller). Chatham Islands' Robin.

Miro traversi Buller, Birds New Zeal. p. 123, June 1872 : Chatham Islands.

Synonym :—

Miro traversi Buller, Suppl. vol. ii. p. 125.

Range :—Chatham Islands (breeding).

Nesomiro traversi dannefærdi (Rothschild). Snares Island Robin.

Miro dannefærdi Rothschild, Nov. Zool. vol. i. 1894, p. 688 : Snares Island.

Synonym :—

Miro dannefordi Buller, Suppl. vol. ii. p. 125.

Range :—Snares Island (breeding).

Genus RHIPIDURA.

Rhipidura Vigors & Horsfield, Trans. Linn. Soc. Lond. vol. xv. 1826, p. 246.

Type (by subsequent designation): *R. flabellifera* (Gmelin).

Rhipidura flabellifera flabellifera (Gmelin). South Island Pied Fantail.

Muscicapa flabellifera Gmelin, Syst. Nat. 1789, p. 943: Dusky Sound, South Island.

Synonyms:—

Muscicapa ventilabrum Forster, Descr. Anim. ed. Licht. 1844, p. 86: Dusky Sound, South Island.

Rhipidura flabellifera Buller, Suppl. vol. ii. p. 126 (part.).

Range:—South Island (breeding).

Rhipidura flabellifera kempi, subsp. n. North Island Pied Fantail.

Synonym:—

Rhipidura flabellifera Buller, Suppl. vol. ii. p. 126 (part.).

Range:—North Island (breeding).

Note:—*R. flabellifera kempi* is easily differentiated by the much lighter coloration of the lower surface and by the more extensive dark coloration of the tail-feathers; this occupies almost the whole of the outer web save on the two central feathers and the outside pair. Type in the British Museum.

Rhipidura flabellifera penitus Bangs. Chatham Islands' Pied Fantail.

Rhipidura flabellifera penitus Bangs, Proc. Biol. Soc. Wash. vol. xxiv. 1911, p. 41: Chatham Islands.

Range:—Chatham Islands (breeding).

Rhipidura fuliginosa (Sparrman). Black Fantail.

Muscicapa fuliginosa Sparrman, Museum Carlson. fasc. ii. 1787, no. xlvii.: South Island.

Synonyms:—

Muscicapa deserti Gmelin, Syst. Nat. 1789, p. 949: new name for *M. fuliginosa* Sparrman.

Rhipidura melanura Gray in Dieffenbach's Travels in New Zealand, vol. ii. 1843, p. 190: Cook's Straits.

Rhipidura tristis Jacquinot & Pucheran, Voy. Pôle Sud, vol. iii. 1853, p. 76, pl. ii. f. 5 : Otago, South Island.
Rhipidura fuliginosa Buller, Suppl. vol. ii. p. 127.

Range :—South Island (breeding). Only a recent settler in the North Island.

Family CAMPOPHAGIDÆ.

Genus CORACINA.

Coracina Vieillot, Analyse nouv. Ornith. 1816, p. 37.

Type (by subsequent designation) : *C. papuensis* (Gmelin).

Coracina robusta robusta (Latham). Australian Little Cuckoo-Shrike.

Lanius robustus Latham, Index Ornith. Suppl. 1801, p. xviii : New South Wales.

Synonyms :—

Corvus melanogaster Latham ib. 1801, p. xxv : same locality.
Colluricincla concinna Hutton, Cat. Birds New Zeal. 1871, p. 15 : New Zealand.
Graucalus melanops Buller, Suppl. vol. ii. p. 128.

Range :—New Zealand (accidental visitor to South Island : three occurrences : Motueka, 1869 or 1870 ; Invercargill Apl. 8, 1870 ; Rabbit Island, Canterbury, June 11, 1904) ; extralimital.

Note :—When Hutton recorded the third example (Trans. New Zeal. Inst. vol. xxxviii. 1905, p. 350) he noted that all three had been recognised as immature examples of *G. melanops*, but that they did not exactly agree with Australian descriptions of that phase. The descriptions of the New Zealand specimens shew that they are all fully adult of this species, better known as *C. mentalis* Vigors & Horsfield (*cf.* Mathews, Nov. Zool. vol. xviii. 1912, p. 327).

Family PARIDÆ.

Genus MOHOUA.

Mohoua Lesson, Compl. Œuvres Buffon, vol. ix. 1837, p. 139.

Type (by monotypy) : *M. ochrocephala* (Gmelin).

Mohoua ochrocephala (Gmelin). Yellowhead.

Muscicapa ochrocephala Gmelin, Syst. Nat. 1789, p. 944: Queen Charlotte's Sound, South Island.

Synonyms:—

Certhia heteroclites Quoy & Gaimard, Voy. de l'Astrol., Zool. vol. i. 1830, p. 223, pl. 17, fig. 1: Tasman Bay, South Island.

Orthonyx icterocephalus Lafresnaye, Revue Zool. 1839, p. 257: Iles Marquises! errore = South Island.

Muscicapa chloris Forster, Descr. Anim. ed. Licht. 1844, p. 87: Queen Charlotte's Sound, South Island.

Clitonyx ochrocephala Buller, Suppl. vol. ii. p. 130.

Range:—South Island (breeding).

Genus CERTHIPARUS.

Certhiparus Lafresnaye, Revue Zool. 1842, p. 69.

Type (by original designation): *C. albicillus* (Lesson).

Certhiparus albicillus (Lesson). Whitehead.

Fringilla albicilla Lesson, Voy. Coquille, Zool. vol. i. 1830, p. 662: Bay of Islands, North Island.

Synonyms:—

Parus senilis Du Bus, Bull. Acad. Roy. Brux. vol. vi. 1839, pl. i. p. 297: New Zealand (North Island).

Clitonyx albicapilla Buller, Suppl. vol. ii. p. 128.

Range:—North Island (breeding).

Genus FINSCHIA.

Finschia Hutton, Ibis, 1903, p. 319.

Type (by original designation): *F. novæseelandiæ* (Gmelin).

Finschia novæseelandiæ (Gmelin). New Zealand Creeper.

Parus novæseelandiæ Gmelin, Syst. Nat. 1789, p. 1013: Dusky Sound, South Island.

Synonyms:—

Parus zelandicus Quoy & Gaimard, Voy. de l'Astrol., Zool. vol. i. 1830, p. 210, pl. 11, fig. 3: Tasman Bay, South Island.

Certhiparus maculicaudus Gray in Dieffenbach's Travels in New Zealand, vol. ii. 1843, p. 189: South Island.

Parus urostigma Forster, Descr. Anim. ed. Licht. 1844, p. 90: Dusky Sound, South Island.

Certhiparus novæzealandiæ Buller, Suppl. vol. ii. p. 136.

Range :—South Island (breeding).

Note :—We have associated these three species together and questionably referred them to the Family Paridæ. The nomenclature here adopted is that proposed by Hutton (Ibis, 1903, p. 31), which is undoubtedly correct wherever the birds are placed. Buller rejected it without any good reason whatever; he claimed that the first two species were congeneric, but used for them a generic name *Clitonyx* proposed long after either of the others here utilised, and, moreover, instead of preserving Hutton's generic name, *Finschia*, for the third, continued the incorrect usage of *Certhiparus*, for which there was no excuse. Until the young are studied and specimens in spirits are anatomically examined we cannot hope for any improvement in their classification.

Family BOWDLERIIDÆ.

Genus BOWDLERIA.

Bowdleria Rothschild, Nov. Zool. vol. iii. 1896, p. 539, note.

Type : we designate *B. punctata* (Quoy & Gaimard).

Bowdleria punctata punctata (Quoy & Gaimard). South Island Fern Bird.

Synallaxis punctata Quoy & Gaimard, Voy. de l'Astrolabe, Zool. vol. i. 1830, p. 225, pl. xviii. fig. 3: Tasman Bay, South Island.

Synonyms :—

Sphenœacus fulvus Gray, Ibis, 1862, p. 221 : Tasman Bay, South Island.

Bowdleria fulva Buller, Suppl. vol. ii. p. 131.

Range :—South Island (breeding).

Bowdleria punctata vealeæ Kemp. North Island Fern Bird.

Bowdleria punctata vealeæ Kemp, Austral Avian Record, vol. i. 1912, p. 124 : North Island.

Synonym :—

Bowdleria punctata (not Quoy & Gaimard) Buller, Suppl. vol. ii. p. 131.

Range :—North Island (breeding)

Bowdleria punctata caudata (Buller). Snares Island Fern Bird.

Sphenœacus caudatus Buller, Trans. New Zeal. Inst. vol. xxvii. 1896, p. 128: Snares Island.

Synonym :—

Bowdleria caudata Buller, Suppl. vol. ii. p. 132.

Range :—Snares Island (breeding).

Bowdleria rufescens (Buller). Chatham Islands' Fern Bird.

Sphenœacus rufescens Buller, Ibis, 1869, p. 38: Chatham Islands.

Synonym :—

Bowdleria rufescens Buller, Suppl. vol. ii. p. 133.

Range :—Chatham Islands (breeding).

Family TURDIDÆ.

Genus TURNAGRA.

Turnagra Lesson, Compl. Œuvres Buffon, vol. viii. 1837, p. 216.

Type (by monotypy): *T. capensis* (Sparrman).

Turnagra tanagra (Schlegel). North Island Thrush.

Otagon tanagra Schlegel, Ned. Tijdschr. Dierk. vol. iii. 1865, p. 190: North Island.

Synonyms :—

Turnagra hectori Buller, Ibis, 1869, p. 39: North Island.
Turnagra tanagra id. Suppl. vol. ii. p. 134.

Range :—North Island (breeding).

Turnagra capensis (Sparrman). South Island Thrush.

Tanagra capensis Sparrman, Museum Carlson. fasc. ii. 1787, no. xlv.: Dusky Sound, South Island.

Synonyms :—

Turdus crassirostris Gmelin, Syst. Nat. 1789, p. 815: same locality.

Campephaga ferruginea Vieillot, Nouv. Dict. d'Hist. Nat. vol. x. 1817, p. 48 : new name for *T. capensis* Sparrman.

Tanagra macularia Quoy & Gaimard, Voy. de l'Astrol., Zool. vol. i. 1830, p. 186, pl. 7, fig. 1 : Tasman Bay, South Island.

Loxia turdus Forster, Descr. Anim. ed. Licht. 1844, p. 85 : Dusky Sound, South Island.

Turnagra crassirostris Buller, Suppl. vol. ii. p. 135.

Range : South Island (breeding).

Family MELIPHAGIDÆ.

Genus NOTIOMYSTIS.

Notiomystis Richmond, Proc. U.S. Nat. Mus. vol. xxxv. 1908, p. 631 (new name for *Pogonornis* Gray, preoccupied by Billberg).

Type (by monotypy) : *N. cincta* (Du Bus).

Notiomystis cincta (Du Bus). Stitch Bird.

Meliphaga cincta Du Bus, Bull. Acad. Sci. Brux. vol. vi. p. 295, June 1839 : North Island.

Synonyms :—

Meliphaga (*Ptilotis*) *auritus* Lafresnaye, Revue Zool. Sept. 1839, p. 257 : North Island.

Pogonornis cincta Buller, Suppl. vol. ii. p. 137.

Range : North Island (breeding).

Genus ANTHORNIS.

Anthornis Gray, List Gen. Birds, 1840, p. 15.

Type (by original designation) : *A. melanura* (Sparrman).

Anthornis melanura melanura (Sparrman). Korimako or South Island Bell Bird.

Certhia melanura Sparrman, Museum Carlson. fasc. i. 1786, no. v. : Queen Charlotte's Sound, South Island.

Synonyms :—

Certhia sannio Gmelin, Syst. Nat. 1788, p. 471 : same locality.

Anthomiza cæruleocephala Swainson, Classif. Birds, vol. ii. 1837, p. 327 : new name for *C. melanura* Sparrman.

Certhia olivacea Forster, Descr. Anim. ed. Licht. 1844, p. 79: Queen Charlotte's Sound, South Island.

Anthornis ruficeps Pelzeln, Verh. zool.-bot. Gesellsch. Wien, 1867, p. 316: South Island.

Anthornis melanura Buller, Suppl. vol. ii. p. 138 (part.).

Range:—South Island (breeding).

Anthornis melanura dumerilii (Lesson). North Island Bell Bird.

Philedon dumerilii Lesson, Voy. Coquille, Zool. vol. i. 1830, p. 644: Bay of Islands, North Island.

Synonym:—

Anthornis melanura Buller, Suppl. vol. ii. p. 138 (part.).

Range:—North Island (breeding).

Anthornis melanura incoronata (Bangs). Auckland Islands' Bell Bird.

Anthornis incoronata Bangs, Proc. Biol. Soc. Wash. vol. xxiv. 1911, p. 23: Auckland Islands.

Range:—Auckland Islands (breeding).

Anthornis melanura melanocephala (Gray). Chatham Islands' Bell Bird.

Anthornis melanocephala Gray in Dieffenbach's Travels in New Zealand, vol. ii. 1843, p. 188: Chatham Islands.

Synonyms:—

Anthornis auriocula Buller, Essay New Zeal. Ornith. 1865, p. 8: Chatham Islands.

Anthornis melanocephala Buller, Suppl. vol. ii. p. 143.

Range:—Chatham Islands (breeding).

Genus PROSTHEMADERA.

Prosthemadera Gray, List Genera Birds, 1840, p. 15.

Type (by original designation): *P. novæseelandiæ* (Gmelin).

Prosthemadera novæseelandiæ novæseelandiæ (Gmelin). South Island Tui.

Merops novæseelandiæ Gmelin, Syst. Nat. 1788, p. 464: Queen Charlotte's Sound, South Island.

Synonyms :—

Merops cincinnatus Latham, Index Ornith. vol. i. 1790, p. 275 : new name for *M. novæseelandiæ* Gmelin.

Sturnus crispicollis Daudin, Traité d'Ornith. vol. ii. 1800, p. 314 : Queen Charlotte's Sound, South Island.

Prosthemadera novæzealandiæ Buller, Suppl. vol. ii. p. 144 (part.).

Range :—South Island (breeding).

Prosthemadera novæseelandiæ phœbe Kemp. North Island Tui.

Prosthemadera novæseelandiæ phœbe Kemp, Austral Avian Record, vol. i. 1912, p. 124 : North Island.

Synonym :—

Prosthemadera novæzealandiæ Buller, Suppl. vol. ii. p. 144 (part.).

Range :—North Island (breeding).

Prosthemadera novæseelandiæ kwini Kemp. Auckland Islands' Tui.

Prosthemadera novæseelandiæ kwini Kemp, Austral Avian Record, vol. i. 1912, p. 124 : Auckland Islands.

Range :—Auckland Islands (breeding).

Genus COLEIA.

Coleia Mathews, Austr. Avian Record, vol. i. 1912, p. 116.

Type (by original designation) : *C. caruncuIata* (Latham).

Coleia carunculata (Latham). Yellow Wattle Bird.

Merops carunculatus Latham, Index Ornith. vol. i. 1790, p. 276 : New South Wales.

Synonyms :—

Mimus carunculatus Buller, Essay Ornith. New Zeal. 1865, p. 10 : North Island.

Anthochæra bulleri Finsch, Journ. für Ornith. 1867, pp. 321, 342 : new name for preceding.

Acanthochæra carunculata Buller, Suppl. vol. ii. p. 148.

Range : New Zealand (accidental visitor : two occurrences : Makakana, North Island, before 1865 ; Marton, North Island, before 1883) ; extralimital.

Note :—It would be interesting to know whether these stragglers belong to the typical subspecies which inhabits south Queensland and New South Wales, or to *C. c. tregellasi* (Mathews, Nov. Zool. vol. xviii. 1912, p. 419 : Victoria), the form living in Victoria and South Australia.

Family ZOSTEROPIDÆ.

Genus ZOSTEROPS.

Zosterops Vigors & Horsfield, Trans. Linn. Soc. Lond. vol. xv. 1826, p. 234.

Type (by monotypy) : *Z. lateralis* (Latham).

Zosterops lateralis tasmanica Mathews. Silver Eye.

Zosterops lateralis tasmanica Mathews, Nov. Zool. vol. xviii. 1912, p. 385 : Tasmania.

Synonym :—

Zosterops cærulescens Buller, Suppl. vol. ii. p. 149. [The type-locality of *Z. lateralis* Latham, Index Ornith. Suppl. 1801, p. lv, is New South Wales.]

Range :—Both Islands and the outlying groups (breeding).

Note :—The history of this bird seems to show that it colonised New Zealand from the Australian continent, and that it first appeared in the south of the South Island. That this would appear to be true is evidenced by the fact that the New Zealand birds seem referable to the Tasmanian form and differ appreciably from the New South Wales bird.

Family MOTACILLIDÆ.

Genus ANTHUS.

Anthus Bechstein, Gemein. Naturg. Deutschl. vol. iii. 1807, p. 704.

Type (by subsequent designation) : *A. spinoletta* (Linné).

Anthus novæseelandiæ novæseelandiæ (Gmelin). South Island Pipit.

Alauda novæseelandiæ Gmelin, Syst. Nat. 1789, p. 799 : Queen Charlotte's Sound, South Island.

Synonyms :—

Alauda littorea Forster, Descr. Anim. ed. Licht. 1844, p. 90: same locality.

Anthus grayi Bonaparte, Consp. Gen. Av. vol. i. 1850, p. 249: same locality.

Anthus novæzealandiæ Buller, Suppl. vol. ii. p. 151 (part.).

Range :—South Island (breeding).

Anthus novæseelandiæ reischeki Lorenz-Liburnau. North Island Pipit.

Anthus novæzealandiæ reischeki Lorenz-Liburnau, Annal. K.K. Naturhist. Hofm. Wien, vol. xvii. 1902, p. 308: North Island.

Synonym :—

Anthus novæzealandiæ Buller, Suppl. vol. ii. p. 151 (part.).

Range :—North Island (breeding).

Anthus novæseelandiæ aucklandicus Gray. Auckland Islands' Pipit.

Anthus aucklandicus Gray, Ibis, 1862, p. 224: Auckland Islands.

Synonym :—

Anthus aucklandicus, Buller, Suppl. vol. ii. p. 153.

Range :—Auckland Islands (breeding).

Anthus novæseelandiæ chathamensis Lorenz-Liburnau. Chatham Islands' Pipit.

Anthus novæzealandiæ chathamensis Lorenz-Liburnau, Annal. K.K. Naturhist. Hofm. Wien, vol. xvii. 1902, p. 309: Chatham Islands.

Range :—Chatham Islands (breeding).

Anthus novæseelandiæ steindachneri Reischek. Antipodes Island Pipit.

Anthus steindachneri Reischek, Trans. New Zeal. Inst. vol. xxi. 1889, p. 388: Antipodes Island.

Range :—Antipodes Island (breeding).

Note :—Buller includes *Anthus novæzealandiæ* and *Anthus aucklandicus* as distinct species, rejecting the other named subspecies, writing: "while admitting a certain amount of individual variation, I am quite unable to accept these distinctions as specific." But Lorenz's forms had only been introduced as subspecies and as such should be accepted, and *A. aucklandicus* is only rightly regarded as of that value. Grant (Ibis, 1905, p. 592) lumped the Antipodes Island and Auckland Island Pipits under the name of *Anthus steindachneri*!

Family NEOMORPHIDÆ.

Genus NEOMORPHA.

Neomorpha Gould, Synops. Birds Austr. 1837, pt. i. pl. ii. Type (by monotypy): *N. acutirostris* Gould.

Neomorpha acutirostris Gould. Huia.

Neomorpha acutirostris Gould, Synops. Birds Austr. 1837, pt. i. pl. ii.: North Island.

Synonyms:—

Neomorpha crassirostris Gould, Synops. Birds Austr. 1837, pt. i. pl. ii.: name for male.

Neomorpha gouldi Gray, List Genera Birds, 1841, p. 15: new name only.

Heteralocha acutirostris Buller, Suppl. vol. ii. p. 154.

Range:—North Island (breeding). ? Extinct.

Family CREADIONTIDÆ.

Genus CREADION.

Creadion, Vieillot, Analyse nouv. Ornith. 1816, p. 34. Type (by subsequent designation): *C. carunculatus* (Gmelin).

Creadion carunculatus (Gmelin). Saddle Back.

Sturnus carunculatus Gmelin, Syst. Nat. 1789, p. 805: Queen Charlotte's Sound, South Island.

Synonyms:—

Creadion pharoides Vieillot, Nouv. Dict. d'Hist. Nat. vol. viii. 1817, p. 390: new name for preceding.

Icterus novæzealandiæ Lesson & Garnot, Voy. Coquille, Zool. 1828, vol. i. p. 415: Bay of Islands, North Island.

Icterus rufusater Lesson, ib. 1830, p. 649, pl. xxiii. fig. 1: same locality.
Creadion cinereus Buller, Essay New Zeal. Ornith. 1865, p. 10: Banks' Peninsula, South Island.
Creadion carunculatus Buller, Suppl. vol. ii. p. 161.
Creadion cinereus id. ib. p. 163.

Range:—Both Islands (breeding).

Note:—There does not seem to be much doubt that Buller's *C. cinereus* is the immature plumage of this species. If, however, as Buller contended, the juveniles of the North Island form differ, then it may be that two subspecies are here confused. We have not sufficient authentic material to make a pronouncement. We have admitted as of family rank this genus and also the preceding. They would appear to have little close connection with *Sturnus*, and the present form much more vividly recalls the Icteridæ.

Family CALLÆADIDÆ.

Genus CALLÆAS.

Callæas Forster, Enchiridion, 1788, p. 35.
Type (by monotypy): *C. cinerea* (Gmelin).

Callæas cinerea (Gmelin). Orange-wattled Crow.

Glaucopis cinerea Gmelin, Syst. Nat. 1788, p. 363: Queen Charlotte's Sound, South Island.

Synonyms:—

Cryptorhina callæas Wagler, Syst. Avium, Cryptorhinæ sp. 5, 1827: new name for *C. cinerea* Gmelin.
Glaucopis cinerea Buller, Suppl. vol. ii. p. 164.

Range:—South Island (breeding).

Callæas wilsoni (Bonaparte). Blue-wattled Crow.

Glaucopis wilsoni Bonaparte, Consp. Gen. Av. vol. i. 1850, p. 368: North Island.

Synonyms:—

Callæas olivascens Pelzeln, Verh. zool.-bot. Gesellsch. Wien, 1867, p. 317 note: North Island.
Glaucopis wilsoni Buller, Suppl. vol. ii. p. 166.

Range:—North Island (breeding).

XXIV.—*Proceedings at the Annual General Meeting of the British Ornithologists' Union,* 1913.

The Annual General Meeting of the British Ornithologists' Union for 1913 was held (by permission) at the Offices of the Zoological Society of London on April 9th. The Chair, in the unavoidable absence of the President, was taken by Mr. Edward Bidwell, the senior member of the Committee.

Letters regretting their inability to be present at the meeting were read from Mr. F. D. Godman and Mr. J. Lewis Bonhote.

The Minutes of the last Annual General Meeting were read and confirmed.

The Report of the Committee for the past year was read as follows :—

"The Committee have to report the continued prosperity of the Union during the past year, both as to Membership and as to Finances. The Annual Volume of 'The Ibis' for 1912, published in due course, is the fifty-fourth, and the sixth and last of the Ninth Series under the joint Editorship of Dr. P. L. Sclater, F.R.S., and Mr. A. H. Evans, M.A. It contains 738 pages and is illustrated with ten coloured and two photographic plates, two maps, and fourteen text-figures.

"As regards the accounts, which have been audited in detail by Mr. D. Seth-Smith, the total receipts in 1912 were £663 19*s.* 10*d.*, as compared with £642 14*s.* 7*d.* in the previous year; and the total payments amounted to £630 4*s.* 5*d.* as against £697 9*s.* 0*d.* in 1911. The balance carried forward to 1913 was £139 2*s.* 5*d.* The decrease in payments is mainly due to the diminished cost of the volume of 'The Ibis' for 1912.

"With regret the Committee report the deaths of the following Members since the last Annual General Meeting:— W. I. Beaumont, F. J. Cade, A. O. Hume, Lt.-Col. C. H.

Moore, H. J. Pearson, Dr. E. A. Wilson, W. B. Tegetmeier, Prof. R. Collett, and Dr. W. Blasius.

"The following gentlemen have resigned:—J. M. Boraston, C. W. Campbell, H. C. V. Hunter, Rev. E. P. Knubley, Sir H. E. Maxwell, S. S. Stanley, and W. P. C. Tenison.

"The names of Messrs. E. F. Crossman, C. H. Lyell, and Lord William Percy have been removed from the List of Members under Rule 6.

"The Union now consists of 425 Ordinary Members, 2 Extraordinary, 8 Honorary, 6 Honorary Lady Members, 9 Colonial, and 19 Foreign Members.

"There are 21 candidates for Ordinary Membership of the Union.

"The Committee appointed to revise the B. O. U. List of British Birds have held seven meetings since the last Annual General Meeting, and the revision of the List has now been almost completed. The Committee hope to be able to publish the revised list at the end of the present year or early in 1914.

"The Committee regret that Mr. Frederick DuCane Godman, who has held the office of President of the Union since 1897, does not feel able, owing to ill-health, to allow himself to be nominated for re-election for the coming year. On Mr. Godman's resolution becoming known to the Committee they decided to ask Dr. P. L. Sclater, who, as all members are aware, is not only one of the original members and founders of the Union, but has also been Editor of 'The Ibis' during the greater part of its existence, to allow himself to be nominated for the post. To the Committee's great regret, which they feel assured will be shared by all the Members of the Union, Dr. Sclater finds himself unable, owing to his advanced age, to undertake any fresh responsibilities.

"After careful consideration the Committee decided to ask Col. R. G. Wardlaw-Ramsay to allow himself to be nominated for election, and they confidently recommend him to your consideration.

"Mr. J. Lewis Bonhote, who has been the Honorary Secretary and Treasurer of the Union for six years, has also found it necessary to resign his office, as he is leaving England for a post abroad. The Committee wish to express their gratitude to Mr. Bonhote for his untiring exertions on behalf of the Union during his tenure of office.

"To replace Mr. Bonhote the Committee recommend for election Mr. E. C. Stuart Baker, who is known to most of the members, and who has consented, subject to election, to undertake the duties of Honorary Secretary and Treasurer."

The statement of accounts for the year 1912, previously circulated to the members, was submitted and approved, and a vote of thanks was accorded to the Auditor, Mr. D. Seth-Smith.

The Meeting then proceeded to elect the Officers for the ensuing year, and it was announced that Col. R. G. Wardlaw-Ramsay had been elected President and Mr. E. C. Stuart Baker Hon. Secretary and Treasurer, also that Mr. Henry Munt had been elected a member of the Committee in the place of Mr. Edward Bidwell, who retired by rotation.

The following 21 candidates for Ordinary Membership of the Union were then balloted for and duly elected:—George K. Baynes; George G. Blackwood; Nugent Chaplin; James P. Cook; Francis Cowan; Capt. John A. Doig; James Drummond; Linnæus Greening, F.L.S., F.Z.S.; Dr. J. W. B. Gunning, F.Z.S.; Capt. Ernest C. Hardy, R.N.; John Hewitt, M.A.; Tom Iredale; Godfrey C. Lambert; Kenneth F. Meiklejohn; John H. Owen; Reginald N. Rogers; Henry M. Stanford; John K. Stanford; Edward H. Tuckwell, F.Z.S.; Capt. Francis E. W. Venning; Hugh Whistler.

The following alterations and additions to the Rules were passed :—

1. New rule to follow Rule 10 :

    11. The President shall be elected for five years, at the end of which period he shall not be eligible for re-election.

2. Addition to Rule 11 (now 12). After the words " each year " add :

    " and a fresh member nominated to fill his place. The names of the Officers and the new member of Committee so nominated for the ensuing year shall be circulated with the preliminary notice convening the Annual General Meeting at least six weeks before the Meeting. Should any member wish to substitute another candidate, such nomination, signed by at least two members, must reach the Secretary four clear weeks before the Annual General Meeting in order that both names may be circulated with those of the candidates for ordinary membership."

3. Alteration to Rule 12 (now 13) :

    For " in the month of April or May,"
    Read " in the month of March."

As the recipients of the New Guinea Expedition Medals were not able to be present to receive them, it was decided that the presentations should be made at some future meeting of the British Ornithologists' Club when they were able to be present.

A vote of thanks to the Zoological Society for the use of their Offices and Rooms during the past year was unanimously passed.

A vote of thanks was also passed to the retiring President and Hon. Secretary for the services they had rendered to the Union during their tenure of those offices.

The meeting then adjourned to attend the Annual Dinner, which was held in conjunction with the monthly Dinner of the British Ornithologists' Club, at Pagani's Restaurant, Great Portland Street.

XXV.—*Notices of recent Ornithological Publications.*

Arrigoni and Damiani on the Birds of the Tuscan Islands.

[Note sopra una raccolta di Uccelli dell' Arcipelago Toscano. Dr. E. Arrigoni degli Oddi e Dr. G. Damiani. Rivista Ital. di Ornitologia, i. 1911, pp. 7–62, and 1912, pp. 241–261.]

This paper contains a list of the birds of the islands of Elba, Capraia, Gorgona, Monte Cristo, Pianosa, Giglio, and Gianmitri, which lie between the coast of Tuscany and Corsica. From the first four of these islands the authors have examined examples of 60, 57, 11, and 8 species respectively. Dr. Arrigoni does not recognize any subspecies peculiar to any one of the islands and, moreover, is inclined to doubt the validity of many of those described from Corsica and Sardinia.

Dabbene on the Birds of Paraguay.

[Contribución à la Ornitología del Paraguay. Notas sobre las aves colectadas en Villa Rica por el Señor Félix Posner por Roberto Dabbene. Anales Mus. Nac. Hist. Nat. Buenos Aires, xxiii. 1912, pp. 283–390.]

Señor Dabbene here gives a list of 86 species of Paraguayan birds, collected for the Buenos Ayres Museum, near Villa Rica by Señor Posner. He finds among them some which have not previously been met with in that Republic, namely *Caprimulgus rufus, Xenops genibarbis pelzelni,* and *Pseudocolopteryx sclateri.* Señor Dabbene believes that the rivers Paraguay and Parana below Corrientes form a fairly well-marked faunistic boundary, species found in the Chaco territory being usually represented by distinct geographical races or subspecies in Paraguay and the provinces of Corrientes and Misiones.

Grinnell on the Band-tailed Pigeon.

[The outlook for conserving the Band-tailed Pigeon as a Game Bird of California. By Joseph Grinnell. Condor, xv. 1913, pp. 25–40.]

The Band-tailed Pigeon (*Columba fasciata*) is a western bird ranging from southern British Columbia to northern

Mexico and eastwards to the Rocky Mountains, but its chief, and indeed in winter its only, habitat is southern California. In the winter of 1911–12 enormous numbers of these birds were shot by sportsmen and hunters in the southern coast counties of California, and it is feared by Mr. Grinnell and other ornithologists that unless strong repressive legislative measures are adopted, this bird will share the fate of the Passenger Pigeon of the eastern States.

Fortunately they do not breed in communities, as did the Passenger Pigeon, for during the summer they are scattered throughout the forests and mountains of the whole Pacific district ; but the rate of increase is shown to be very slow, as a rule but one egg is laid and one young reared each year. Mr. Grinnell believes that unless they are accorded at least five years' total protection, they are doomed to extinction.

Hartert on Unfigured Birds.

[On some Unfigured Birds. By Ernst Hartert. Nov. Zool. xix. 1912, pp. 373-374, pls. i. & ii.]

Dr. Hartert gives us figures and further particulars of two very curious birds, which, although already named, require to be better known. *Monias benschi,* described by Messrs. Oustalet and Grandidier in 1903, is from Madagascar, and is certainly one of the most peculiar forms of that abnormal avifauna. It was originally based on a single specimen in the Paris Museum, but Mr. Rothschild has lately obtained three more examples of it. Its true position is, as yet, uncertain, but Dr. Hartert believes that it is not a Passerine bird, and should probably be referred to the Rallidæ, unless it is made the type of a new family.

About the second novelty (*Leucopsar rothschildi*) there is not so much difficulty, as it is manifestly a Sturnine form but quite distinct from all those previously known. It was recently discovered by Mr. Stresemann in the island of Bali.

Hellmayr on the Birds of Lower Amazonia.

[Zoologische Ergebnisse einer Reise in das Mündungsgebiet des Amazonas, herausgegeben von Lorenz Müller. II. Vögel von C. E. Hellmayr. Abh. k. Bay. Akad. Wiss. xxvi. pp. 1–142. Munich, 1912.]

Mr. C. E. Hellmayr is well placed at Munich, where he seems to find ample material for the study of Neotropical birds. He now gives us an excellent account of a collection made at various places in Lower Amazonia by Herr Lorenz Müller, which, although affording good information on points of synonymy and distribution, does not make us acquainted with much that is absolutely new. In fact, the ground near Pará has been pretty well searched already—Wallace, Natterer, Layard, Goeldi, and many other famous collectors, having paid more or less attention to it.

The present paper contains a list with full critical remarks of the birds, 179 in number, obtained in the neighbourhood of Pará. This is followed by a revision of all the species, 379 in number, hitherto recorded from the same district.

The third and fourth parts of the paper are devoted to the island of Mexiana and the fifth to the island of Marajó, both of which lie in the Amazon delta. In the first named of these an interesting new Dendrocolaptine bird, *Siptornis mülleri*, was discovered. Finally, there is a summary containing an account of the zoo-geographical relations of the avifauna of the whole region.

Ingram on the Portuguese Long-tailed Tit.

[Description of a new form of Long-tailed Tit. By Collingwood Ingram. Zoologist, xvii. 1913, p. 137.]

Mr. Ingram finds that the Long-tailed Tit of Portugal is much darker than that of Spain, which it otherwise resembles, and proposes to call it *Ægithalus caudatus taiti*, after Mr. W. C. Tait.

Ménégaux on European Birds.

[Catalogue des oiseaux de la Collection Marmottan du Muséum d'histoire naturelle de Paris. Par A. Ménégaux. Reprinted from the 'Bulletin de la Société Philomathique de Paris,' 1911 and 1912, pp. 1–216. Tours. 8vo.]

In this catalogue of the well-known collection of European birds made some years ago by Dr. H. Marmottan, which is now exhibited in the galleries of the Muséum d'histoire naturelle in Paris, M. Ménégaux has endeavoured to assign to each species the name which belongs to it under the law of strict priority. We notice that although he calls the Song-Thrush *Turdus philomelus,* he cannot bring himself to make the Redwing *Turdus musicus*, but in most cases he appears to follow the nomenclature of Dr. Hartert.

As the greater number of the specimens catalogued were taken in France and the collection is a very complete one, the work forms a nearly complete list of the Birds of France.

Mathews' Birds of Australia.

[The Birds of Australia. By Gregory M. Mathews. Vol. ii. pt. 5, pp. 477–527, pls. 121–124 (Jan. 1913); vol. iii. pt. 1, pp. 1–104, pls. 125–137 (April 1913). London (Witherby), 4to.]

In these parts two points are again particularly noticeable—the careful search for the earliest available name of each bird, and the reproduction of original descriptions which have been more or less lost to sight. With the Petrels we have left behind us the chief of Solander's accurate diagnoses, but Mr. Mathews continues to earn our gratitude by examining those of Lesson in the 'Echo du Monde savant' and others of later date. Moreover, in discussing the several genera and species, he takes into consideration for purposes of comparison the forms which do not occur in Australia, while under the head of habits he gives us a good deal of fresh information from his correspondents.

It is somewhat difficult to criticise the details in the text, as the author's idea of what constitutes a species differs considerably from that of the world in general; but we think that he is quite right in assigning much importance to colour as well as to structure, while he might truly add that habits also may be an indication of affinities.

In vol. ii. pt. 5, we have the conclusion of the Lariformes with the family Catharactidæ, which Mr. Mathews uses for the Skuas from Brünnich's *Catharacta*. *C. antarctica* of the Falklands here stands as a subspecies of the northern

C. skua; *C. lönnbergi lönnbergi* is the New Zealand form; and two new subspecies—*C. l. clarkei* and *C. l. intermedius*—are proposed for the South Orkney and Kerguelen birds. The suggested subspecies of *C. maccormicki* (*C. m. wilsoni*) from Weddell Sea seems premature, as it is founded on two examples only. *Coprotheres* is used for the "Pomatorhine Skua" and *Stercorarius* for the "Arctic Skua," while a new genus *Atalolestris* is made for "Buffon's Skua."

Vol. iii. begins with the Charadriiformes, wherein Mr. Mathews states his preference for small groups, in the face of the difficulty of clearly limiting those that are larger. His families are Morinellidæ (*Morinella* = *Strepsilas*), Hæmatopodidæ, Charadriidæ (Lapwings and Plovers only), Recurvirostridæ, Ibidorhynchidæ, Scolopacidæ, and Phalaropidæ.

Pluvialis is used for the Golden Plover section; *Charadrius* for *Ægialitis*; *Cirrepidesmus* for *Charadrius bicinctus* and *C. mongolus*; while two new genera are propounded, *Pagoa* for *Charadrius geoffroyi* and *Eupodella* for *C. veredus*. Moreover, the author limits *Lobibyx* (=*Lobivanellus*) to the Australian and Moluccan species, and proposes new genera—*Afribyx* and *Rogibyx*—for the African and Malayan forms. *Lobibyx* has two Australian species, one with three subspecies; *Hæmatopus ostralegus* has five subspecies (including *longirostris*, but sinking *H. l. mattingleyi*); *H. niger* has six subspecies; *H. quoyi* of the Falklands is granted a special subgenus *Prohæmatopus*; *Erythrogenys* and *Zonifer* have two subspecies each. *Cirrepidesmus atrifrons* of Wagler is shewn to be a subspecies of *C. mongolus*; its synonymy is discussed, and the author's *C. bicinctus incertus* is now sunk.

The illustrations are of their usual excellence, and good figures are given of several of the heads, bills and legs.

Millais' Diving Ducks.

[British Diving Ducks. By J. G. Millais, F.Z.S., M.B.O.U. Vol. i. Pp. xvi+141; 32 plates. London (Longmans), 1913, 4to. £12 12*s*. for the 2 vols.]

Mr. Millais' new book on the Diving Ducks forms a sequel to a somewhat similar work on the Surface-feeding Ducks published some years ago. In the present volume he deals with eleven species only—six Pochards (the Red-crested, Common, and Baer's), the Ferruginous Duck, Tufted Duck, and Scaup, all of which are included in the genus *Nyroca*; while the other five—Golden-eye, Barrow's Golden-eye, Buffel-headed, Long-tailed, and Harlequin—are placed in the genus *Clangula*. As in all Mr. Millais' works, the great feature is the illustrations. Most of the adult birds are painted by Mr. A. Thorburn, and each plate is a finished picture, remarkable not only for the accuracy of the colouring of the individual Duck, but for the artistic symmetry of the whole surrounding; moreover, the plates have been most beautifully reproduced by Frisch of Berlin. Perhaps of even greater scientific value are the illustrations of eclipse plumage and of the sequence of plumages, all of which are described at great length in the text.

Mr. Millais himself contributes a series of black-and-white sketches of courtship attitudes and other incidental views of duck-life, all remarkable for their vividness and sense of energy.

Mr. Millais still adheres to his views in regard to colour-change in the fully-formed and adult feathers which have been so often criticised and controverted. He does not appear to bring forward any fresh evidence on the point, nor does he seem to have much support from his friends whose views he quotes. It is, of course, easy to understand how a brilliant metallic sheen, due to interference and not to pigment, can be dulled by wear, and how the abrasion of the tips and edges of feathers may change the whole colour-scheme of a bird; but we are bound to confess that we fail to understand how what Mr. Millais describes as "a fresh rise of colour" can possibly take place in an adult feather by any physical or physiological process yet known. We congratulate Mr. Millais on his magnificent work, and shall look forward with great interest to the appearance of the second volume.

North on Australian Nests and Eggs.

[Nests and Eggs of Birds found breeding in Australia and Tasmania. By Alfred J. North, C.M.Z.S. Vol. iii. pts. iv. & v. 1912, and vol. iv. pt. i. 1913, pp. 249–362 and 1–96, pls. A 15–A 17, Bxvi.–Bxviii. Sydney (Australian Museum). 4to.]

Since July last ('Ibis,' 1912, p. 548) three more parts of Mr. North's excellent work have reached us. These contain descriptions of the nests and eggs of the remaining Accipitres, the Striges, Steganopodes, Herodiones, and Anseres. In addition to nesting notes there are descriptions of the birds themselves, and often comments on the plumage changes, distribution, and other habits. Of the two series of plates, the A-series are reproductions of photographs of nesting-sites and young birds, the B-series contain figures of the eggs described, reproduced from photographs, of which, however, it is impossible to judge, as those sent for review are uncoloured. We would also like to enter a protest against the practice of stamping most of the plates and outside leaves with "specimen copy for review," as the whole appearance of the copy is thus much disfigured.

Oberholser on the Great Blue Heron.

[A Revision of the forms of the Great Blue Heron (*Ardea herodias* Linnæus). By Harry C. Oberholser. Proceedings of the United States National Museum, vol. xliii. 1912, pp. 531–559.]

In this memoir the author treats the Great Blue Heron in much the same fashion as he did the Little Green Heron in a previous paper. He has been able to examine 221 examples of the species, which ranges from Alaska to the Galapagos, Panama, and the West Indies, and finds that he can distinguish ten recognisable races. Of these, *Ardea herodias adoxa* from the West Indies, *A. h. hyperonica* from the Pacific coast-region of the United States, and *A. h. oligista* from Santa Barbara Islands, California, are here described for the first time.

Mr. Oberholser regards *Ardea occidentalis*, a pure white form which only occurs on the Florida Keys, as a distinct species from *A. herodias,* and the curious intermediate form *A. wurdemannii* as a hybrid between *A. occidentalis* and *A. h. wardi,* thus making plain the relationships of these forms which have so long been a puzzle, but this matter will be more fully discussed in a subsequent paper.

Oberholser on New Birds from Sumatra and its Islands.

[Descriptions of one hundred and four new species and subspecies of Birds from the Barussan Islands and Sumatra. By Harry C. Oberholser. Smithsonian Miscell. Coll., vol. lx. no. 7, 1912, pp. 1–22.]

This paper contains short differential characters of 104 forms of bird-life based on specimens obtained by the well-known American traveller and collector Dr. W. L. Abbott, chiefly in the Barussan Islands on the west coast of Sumatra. It appears to be intended to publish a complete account of the large collections of birds made by Dr. Abbott when he visited many little-known localities among the East Indian Islands. But we are rather surprised to see that such a large number of new forms can be met with in Sumatra and on the small islands that border it on the western side, and we fear that Mr. Oberholser bases his "new subspecies" on somewhat small differences. "Like *Psittinus cyanurus,* but decidedly larger" is rather a curt character for a new bird, even in these days of trinomials.

We need not reprint the names of the 104 new species and subspecies, but they will be easily found in the original memoir. The specimens are all in the United States National Museum at Washington.

Ogilvie-Grant on the Birds' Eggs of the British Museum.

[Catalogue of the Collection of Birds' Eggs in the British Museum (Natural History). Volume V. Carinatæ (Passeriformes completed). By W. R. Oglivie-Grant. Pp. xxiv+548, plates i–xxii. London, 1912. 8vo.]

The issue of the fifth and last volume of the 'Catalogue of the Birds' Eggs in the British Museum' is an event which should not pass without a record, and we have great pleasure in congratulating the authors on the completion of their work. There is, so far as we are aware, no other Collection that is likely to rival it, either in extent or in the richness of its contents, the best on the Continent being that of Nehrkorn, which, we believe, is now merged in the Berlin Museum.

When the plan of the great Catalogue of Birds was formed we believe that eggs were considered, but it was decided to place them in a separate series, in agreement with the nomenclature and arrangement of the 'Catalogue of Birds,' and this plan has been adhered to throughout. The preparation of the first volume of the Catalogue of Eggs was placed in the hands of the late Mr. Eugene W. Oates, well known as a great authority on the Birds of India and as a reliable coadjutor to the late Mr. Allan Hume. It begins with the lowest forms of Bird-life, those related to the Ratitæ and the inferior groups of the Carinatæ. In the introduction will be found an excellent summary of the principal additions made to the Collection in each year since about 1842, calling attention to such as were of special importance, as the Seebohm Collection, the Hume Collection, and the Salvin-Godman Collection. In the first volume of the Catalogue of Eggs, 12,150 specimens were enumerated and referred to 520 species. This volume is illustrated by 18 coloured plates, and was published in 1901.

The second volume of the Catalogue, which was issued in 1902, was prepared by the same author and continues the account of the eggs of the Orders succeeding the Lariformes (according to Dr. Sharpe's arrangement). It relates to ten of these, which are represented in the British Museum by 14,998 specimens of eggs referred to 726 species. Fourteen beautiful plates illustrate this volume.

In the preparation of the third volume, unfortunately, owing to Mr. Oates' failing health, it became necessary to make some change in the authorship, and the name of Capt. Savile G. Reid, well known for his writings on the birds of South Africa, became associated with that of Mr. Oates. The volume was published in 1903, and continued to follow

Sharpe's nomenclature and arrangement. It is based on 8474 specimens then in the Museum which are referred to 967 species, and is illustrated by 10 coloured plates. The fourth volume, published in 1906, prepared under the same joint authorship, continues the account of the eggs of the Passeriform Birds. It is based on the series of 14,917 specimens belonging to this section contained in the Museum. These are referred to 630 species, and the volume is illustrated by 14 coloured plates.

After 1906 a lamentable delay occurred owing mainly to the bad health of Dr. Sharpe, and the pressure of other matters on the under-manned staff of the Bird Department. Those who wish to know the reason why the issue of the fifth and final volume (now before us) was not published long ago should read the Preface and Mr. Ogilvie-Grant's Introduction to the volume. The enormous number of specimens (19,283) is quite sufficient to account for the delay, let alone the pressure from other matters, well known to many of our readers. But take the five volumes as a whole, and as a solid contribution to Oology there is nothing like it been even attempted. Errors and mistakes of various kinds may easily be found in it no doubt by those who wish to criticise, but our verdict is decidedly favourable to the 'Catalogue of Birds' Eggs,' which is an excellent and most useful piece of work, especially for Oologists.

It must always be remembered that the identification of eggs must rest with the collector and that the author of such a work as the present is bound to accept the collector's identification unless he has exceedingly strong reasons for rejecting it, and in this case his only logical course is to destroy or make away with the wrongly identified specimens as being a source of error to future workers.

Pycraft on Palæocorax moriorum.

[On the Skeleton of *Palæocorax moriorum.* By W. P. Pycraft, M.B.O.U. Nov. Zool. xviii. 1911, pp. 123–128, pl. ii.]

In 1892 Dr. H. O. Forbes discovered the remains of a large Corvine Bird in the Pleistocene deposits of Chatham Island. These he referred to a Crow (Nature, xlvi. p. 252), under the name *Corvus moriorum.* Dr. Forbes afterwards elevated this species to generic rank as *Palæocorax moriorum* (Bull. B. O. C. i. p. xxii), but Mr. Pycraft is not at all sure that the bird merits generic separation from *Corvus.*

Robinson on the Eider.

[The first Nesting of the Common Eider in Ireland. By H. W. Robinson, M.B.O.U. British Birds, vi. 1912, p. 106.]

Mr. Robinson states that the nest of the Common Eider (*Somateria mollissima*) was found by a friend of his on a small island off the coast of Donegal (not Down as printed in the journal). This is a considerable extension of its breeding-range, as although it nests on the Northumberland coast and northwards, it is only known as a straggler in Ireland.

In a note appended to the paper, the Editor of 'British Birds' regrets that the eggs of such a rare bird should have been taken, and in this we very heartily concur.

Rothschild and Hartert on Birds from New Guinea.

[Preliminary Descriptions of some New Birds from Central New Guinea. By the Hon. Walter Rothschild, Ph.D., and Dr. E. Hartert. Nov. Zool. xviii. 1911, pp. 159–160.]

From a collection made by Mr. A. S. Meek, who accompanied a Dutch expedition up the Eilanden River and on to Mt. Goliath, the following birds are described as new:—*Paradigalla brevicauda, Cyclopsitta blythi meeki, Charmosyna stellæ goliathina,* and *Falcinellus striatus atratus.*

Rothschild and Hartert on their Algerian Journeys.

[Ornithological Explorations in Algeria. By the Hon. W. Rothschild, Ph.D., and E. Hartert, Ph.D. Nov. Zool. xviii. 1912, pp. 456–550, pls. ix–xi. & xv–xxvi.]

In this most interesting memoir will be found a complete account of the ornithological results of three visits to Algeria made by the authors in the years 1908, 1909, and

1911. It commences with a summary of the routes taken by the three expeditions, and general remarks on the country traversed and its inhabitants, which we are sure will be read with pleasure by every ornithologist. After these general remarks, which occupy some 70 pages, comes a general list of the birds collected and observed during the expeditions. These are 250 in number. But this part of the memoir can be in no way treated as a mere "List." It contains full remarks not only on the localities, but on the habits and alliances of every one of the birds met with or observed which nearly entitle it to be treated as a History of the Birds of Algeria, and it certainly makes the best authority on that subject yet in existence.

The Avifaunas of Europe and Algeria resemble each other so closely that the student of the one easily becomes acquainted with the facies of the other. There are, however, small and, in some cases perhaps, almost imperceptible differences between the European birds and their Algerian representatives which can be realized by the skilful maker of subspecies. It will be seen, on looking through the present volume, that "trinomials" are plentifully used by the authors to designate such cases. The forms of Algerian bird-life have been so well provided with subspecific names by previous writers that only two appear still to remain nameless—*Colœus monedula cirtensis* and *Galerida theklæ hilgerti*.

On the plates will be found illustrated two forms of *Merops persicus*, three of *Galerida theklæ*, and a number of the heads of the various forms of Sparrow whose relationships are somewhat complicated. Plates 15–26 contain reproductions of photographs of Algerian scenes taken by the two authors.

Salvadori on the Parrots allied to Conurus æruginosus.

[Note on *Conurus æruginosus* and its Allied Species. By T. Salvadori. Nov. Zool. xix. 1912, pp. 84–85.]

Count Salvadori revises the arrangement of the species of the genus *Conurus* allied to *Conurus æruginosus*, and distinguishes eight species instead of four as given in the 'Catalogue of Birds.' These are *C. cactorum* from S.E. Brazil, *C. xanthogenius* from Bonaire, *C. pertinax* from Curaçao and St. Thomas, *C. ocularis* from Panama, *C. æruginosus* from British Guiana, *C. arubensis* from Aruba, *C. tortugensis* from Tortuga, and *C. chrysophrys* from Colombia.

Salvadori on a new European Bird.

[Singulare cattura di una specie orientale del genere "*Ardetta*" nuova per l'Italia e per l'Europa. T. Salvadori. Riv. Ital. Orn. ii. 1912, pp. 86–88, tav. i.]

Count Salvadori records the capture near Bra in Piedmont, Italy, of an example of *Ardetta eurythma* of Swinhoe, a species found in eastern Asia from Siberia to China and Borneo. It has not hitherto been taken in Europe. A description and coloured plate accompany the note.

Salvadori and Festa on the Sardinian Jay.

[La Ghiandaia di Sardegna. T. Salvadori ed E. Festa. Riv. Ital. Orn. ii. 1912, pp. 113–116.]

The Sardinian Jay already rejoices in two names, *Garrulus ichnusæ* Kleinschmidt, and *G. glandarius sardus* Tschusi. It is said to differ from the continental and typical race by its slightly smaller size, especially as regards the beak.

Count Salvadori and Signor Festa have recently compared a long series collected by the latter in Sardinia with a number of typical Italian examples, and have come to the conclusion that there is no ground for distinguishing the Sardinian race, and in this they are at one with two other Italian Ornithologists—Count Arrigoni degli Oddi and Signor Martorelli.

Sassi on Collections from Mesopotamia and Central Africa.

[Liste von Vogelbälgen aus Mesopotamien von Dr. Moriz Sassi (Wien). Ann. k.-k. Naturhistorischen Hofmuseums Wien, xxvi. 1912, pp. 117–119, Taf. 1.

Eine neue Art des Genus *Cercococcyx*. *Id. ibid.* pp. 341–342.

Beitrag zur Ornis Zentralafrikas. *Id. ibid.* pp. 347–393, Taf. 5.]

In the first of these papers Dr. Sassi of the Vienna

Museum gives a list of birds collected by Dr. V. Pietschmann and Selim Hassoun, mainly from the neighbourhood of Mosul. No new species are described, but the paper is accompanied by a very interesting photograph of the nest-holes of *Merops persicus.* These are found in extraordinary abundance on the flat dry surface of the desert at Es Scheriat el Beda, near Bagdad, and in other localities.

The other papers deal with a large and important collection of birds made by Rudolf Grauer in the lake districts of Central Africa, during the period December 1909 to February 1911.

Some of Grauer's collections have gone to Tring and some were acquired by the Duke of Mecklenburg during his first journey through the lake districts, and both Dr. Hartert and Dr. Reichenow have described some very interesting new species from these earlier collections.

In the paper now before us only the non-passerine portion of the Vienna collection is described. The number of species listed is 193, and *Columba albinucha*, *Asio abessinicus graueri*, and *Cercococcyx olivinus* are described as new, the first-named being figured on a coloured plate.

Dr. Grauer's route started at Bukoba on the western side of the Victoria Nyanza, whence he proceeded to the northern end of Lake Tanganyika. Thence he turned to the north to Lakes Kivu and Albert Edward, and to the Irumu and other localities in the Congo Forest west of Lake Albert Edward.

Stone on Colour-Characters.

[The Phylogenetic Value of Colour-Characters in Birds. By Witmer Stone, A.M. Journ. Acad. Nat. Sci. Philad. xv. 1912, pp. 313–319, pl. xxvii.]

Mr. Witmer Stone believes that colour-pattern among birds is often a very fundamental characteristic, and that by means of it the phylogeny of a group can be much more easily traced than by the so-called structural characters of the size and shape of the beak and the position of the nostril.

As instances he quotes the three East Indian Cuckoos, *Dryococcyx harringtoni* from the Philippines, *Rhinococcyx curvirostris* from Java, and *Urococcyx erythrognathus* from Sumatra. These three birds so closely resemble one another in colour that it is with difficulty that they can be distinguished, but as the position and character of the nasal opening is strikingly different in all three birds they are placed by systematists in three distinct genera. Other instances of where colour-characters are obviously of more importance phylogenetically than so-called structural characters are instanced among the Meropidæ and Alcedinidæ.

Swann on Bird-Names.

[A Dictionary of English and Folk-names of British Birds, with their History, Meaning, and first usage: and the Folk-lore, Weather-lore, Legends, etc., relating to the more familiar species. By H. Kirke Swann. Pp. xii + 266. London (Witherby), 1913. 8vo. Price 10*s.* net.]

This useful work contains a list of nearly 5000 names which have been applied to British birds. Among them are the vernacular names of the older works beginning with Turner's 'Avium Præcipuarum Historia,' published in 1544, and reprinted and edited by Mr. A. H. Evans in 1903. Local and provincial names, including Gaelic, Welsh, Cornish, and Irish, are included, and all are referred to the accepted English name of the species as used in Messrs. Hartert, Jourdain, Ticehurst, and Witherby's 'Hand-list,' and are printed in large capitals.

The derivation of the principal names cited are discussed at considerable length. and the views of ornithologists like Newton, Yarrell, and Harvie-Brown are quoted and criticised as well as those of Skeat, Littrè, and of the New English Dictionary still in the course of publication at Oxford and edited by Sir James Murray.

The only work which approaches the present one in its scope is Swainson's 'Folk-lore and Provincial Names of Birds,' published in 1886, but this did not contain the book-names nor was it arranged in dictionary form.

Taylor on Dominancy.

[Dominancy in Nature and its Correlation with Evolution, Phylogeny, and Geographical Distribution. Presidential Address delivered at the 51st Annual Meeting of the Yorkshire Naturalists' Union, at the Royal Institution, Hull, on March 20, 1913. By John W. Taylor.]

The thesis which Mr. Taylor sets himself to prove is that the region of the earth where competition and the struggle for existence is most severe, and where consequently only the most highly organized and well equipped forms of animal life have survived, is the north-central portion of Europe.

Mr. Taylor is a malacologist of considerable repute, and most of his argument is based on a study of the land Mollusca of the world, but on page 22 he attempts to show that Dominancy in bird life also has its culminating point in western Europe, illustrating his remarks by instancing the Jays, the Coal-Tits, and Grey Shrikes, in all of which cases the most specialized forms inhabit western Europe, while the more primitive forms are found in Asia and North Africa.

Trotter on the Faunal Regions of North America.

[The Faunal Divisions of Eastern North America in Relation to Vegetation. By Spencer Trotter, M.D. Journ. Acad. Nat. Sci. Philad. xv. 1912, pp. 207–218.]

The current classification of North American faunal areas is that of Dr. C. Hart Merriam, who divides the North American Continent into two dominant zones extending across its entire breadth—a Boreal and Sonoran, the first of which has environmental conditions and a fauna closely resembling that of the northern zone of Eurasia. These and other minor and intermediate divisions are almost entirely based on differences of temperature alone.

Dr. Trotter believes that a truer classification of faunal areas can be reached by taking other factors into consideration as well as temperature, especially atmospheric precipitation and soils, and he would follow Schimper, who recognizes three types or formations of vegetable life—Woodland, Grassland, and Desert.

Dr. Trotter's suggested divisions are as follows:—

1. The Subarctic Fauna, divided into (*a*) The Barren Ground Type; (*b*) The Tree-limit Type.
2. The Atlantic Forest Fauna, divided into (*a*) The Coniferous Forest Type; (*b*) The Deciduous Forest Type.
3. The Coastal Plain Fauna, divided into (*a*) The Alluvial Forest Type; (*b*) The Marshland Type; (*c*) The Pine Barren Type.
4. The Grassland Fauna, divided into (*a*) The Prairie Type; (*b*) The Steppe Type.
5. The Plateau Fauna, divided into (*a*) The Cactus Desert Type; (*b*) The Mountain Forest Type.

Each of these regions is considered in turn, and its vegetation and faunal characteristics passed in review.

Tschusi on Austro-Hungarian Avian Literature.

[Ornithologische Literatur Österreich-Ungarns, Bosniens und der Herzegowina 1911. Von Viktor, Ritter v. Tschusi zu Schmidhoffen. Verhandl. zool.-bot. Ges. Wien, lxii. 1912, pp. 260–289.]

A bibliography of all the ornithological literature published each year in Austro-Hungary is annually issued by Viktor, Ritter von Tschusi zu Schmidhoffen.

Aquila.

[Aquila. Zeitschrift für Ornithologie. Redact. Otto Herman. Tom xix. 1912, Budapest.]

Most of the articles in the current volume of 'Aquila' are concerned with migration problems and bird-protection in Hungary. Dr. Herman was one of the first to adopt the plan of ringing birds in order to trace out their migration movements, and the method was first applied to the White Stork. We have in this volume several articles on the sojourn of this species in South Africa, and there can be now no doubt that a good many individuals remain there throughout the southern winter months, though there is as yet no evidence to prove that they ever breed there at any time of the year.

Two important articles by Messrs. Thaisz and Csiki deal with the vegetable and insect food of the Partridge; and there is a long and well illustrated paper by Dr. Greschik on the microscopic anatomy of the large intestine of several selected types of birds.

As is usual, the articles are all printed in parallel columns in German and Magyar.

Austral Avian Record.

[The Austral Avian Record. Vol. i. 1913, nos. 6, 7, 8. Edited by Gregory M. Mathews. London (Witherby).]

The double number, 6 & 7, contains a list of all the species of Australian birds described by John Gould, with the location of the type-specimens as far as possible.

It may not be generally known that John Gould's collection of Australian birds was acquired by Dr. Thomas B. Wilson, of Philadelphia, who had made large collections of birds from various parts of the world.

Dr. Wilson was for some time President and was always largely interested in the Academy of Natural Sciences of Philadelphia, and to its Museum he presented his entire Ornithological collection numbering some thirty thousand specimens, including Gould's Australian birds.

Mr. Witmer Stone, the present Curator of the Museum of the Academy, has assisted Mr. Mathews in preparing this list, shewing at a glance where the types of all the Gouldian birds are (some of the types of the birds described after Dr. Wilson's purchase are in the British Museum or elsewhere), and where they originally came from. There is no doubt that this piece of work will be of infinite value to all workers in Australian ornithology.

The eighth number contains descriptions of additional subspecies of birds from the Monte Bello Islands off the north-west coast of Australia and from elsewhere, a discussion of the correct type species of the genus *Meliphaga*, and definitions of some new generic names for Australian birds, all by Mr. Mathews.

British Birds.

[British Birds. An illustrated magazine devoted to the birds on the British List. Vol. vi., June 1912–May 1913. London (Witherby).]

With the number for May 1913 'British Birds' terminates its sixth volume, and we may heartily congratulate Mr. Witherby on his successful undertaking. The volume contains a very large number of short notes on the capture or observation of rare birds, and migration dates and other field notes, and is invaluable for the student of British bird-life.

Two new British birds are described: one is the British form of the Black Grouse, which is described by Messrs. Witherby & Lönnberg under the name of *Lyrurus tetrix britannicus.* It is only the females of the British race which can be satisfactorily distinguished from the typical Swedish race. These differ in several respects, the most noticeable being the greater amount of rufous on the belly and under tail-coverts.

The other new subspecies is the British race of the Lesser Black-backed Gull, described as *Larus fuscus britannicus* by Dr. Percy R. Lowe. It differs from the Swedish race, on which Linnæus originally founded the species, in its much lighter-coloured slaty-grey back in contrast to the slaty-black back of the Swedish bird, and is quite obviously a distinct race. Dr. Lowe believed that the British race was undescribed when he named it, but subsequently Mr. Tom Iredale (p. 360) has shewn that our British Lesser Black-backed Gull is almost certainly identical with a bird described by Reinhardt in 1853 from Greenland, and our British bird will have to be known as *Larus fuscus affinis.*

Mr. Parkin records the occurrence of the Terek Sandpiper (*Terekia cinerea*) for the first time in the British Islands. Four examples in all were taken in Romney Marsh. This bird breeds in northern Russia and Siberia and winters in southern Asia and eastern and central Africa, and has been occasionally taken in middle and south-western Europe.

The bird-marking enquiry progresses. No less than

11,483 birds were ringed in 1912, and among the more striking results a Yorkshire Black-backed Gull was captured in the Azores, a Berkshire Starling in Finland, and a Stafford Swallow, ringed in May 1911, was captured near Utrecht in Natal in December 1912.

Another enquiry recently started by 'British Birds' is as to the alleged decrease or increase of our summer residents; the results of this will be forthcoming later. Among other articles of special interest we may mention those of Mr. Mullens on Sir Robert Sibbald's early work on the Scottish Fauna published in 1684; of Mr. Abel Chapman, "Spring-notes on the Borders," illustrated with beautiful and delicate black-and-white sketches by the author himself; and finally of Dr. Penrose, "Field-notes on a pair of Stone Curlews," with a coloured plate reproduced direct from a Lumière Autochrome colour-photograph taken by the author.

The nomenclature used in future in this journal will be that of the 'Hand-list of British Birds' recently issued.

Cassinia for 1912.

[Cassinia. A Bird Annual. Proceedings of the Delaware Valley Ornithological Club of Philadelphia, no. xvi. for 1912, pp. 1–72.]

This annual, which is devoted to the ornithology of Pennsylvania, New Jersey, and Delaware, contains a number of pleasantly written contributions, though naturally they are chiefly of local interest. The first article, by Mr. Witmer Stone, deals with the career of George Archibald McCall, an army officer of the first half of the nineteenth century, whose name was given by Cassin to the Texas Screech Owl *Otus asio macalli*, and who contributed much information on the life-history of the birds described by Cassin in his 'Birds of California and Texas.'

Mr. J. K. Potter writes a report on the large roost-places of the Purple Grackle (*Quiscalus quiscala*) in certain woods near Philadelphia, which are occupied by many hundreds or thousands of individuals year after year.

The report on the spring migration of 1912 is skilfully compiled from the observations of the members of the Club by Mr. Witmer Stone on the same lines as those of previous years, and probably forms the most valuable contribution of permanent interest.

Journ. S. African Orn. Union.

[Journal of the South African Ornithologists' Union. Vol. viii. for 1912, Pretoria.]

The principal paper in the present volume is perhaps one by Mr. Austin Roberts, containing field-notes on the birds collected by himself and Mr. F. Vaughan Kirby for the Pretoria Museum in the province of Boror, which lies north of the lower reaches of the Zambesi and stretches from Quilemane to southern Nyasaland. A good many new forms have already been described from this collection, and several additional ones are here named. One very interesting observation made by Mr. Austin some time ago and here confirmed is of the parasitic habit of the Widow Bird (*Vidua serena*), which lays its eggs in the nests of another Widow Bird (*Coliuspasser ardens*). The volume contains other interesting papers by Mr. E. C. Chubb, of the Durban Museum, Mr. C. G. Davies, Mr. A. Haagner, and others.

Other Ornithological Publications received.

Bucknill, J. A. Natural History and Sport in Cyprus. (Handbook of Cyprus, 1913.)

Høring, R. Fuglene ved de danske Fyr i 1912. (Vid. Meddel. Dansk. Nat. Foren., Bd. 65, 1913.)

Moulton, J. C. Eleventh Report of the Sarawak Museum. Sarawak, 1913.

Thomson, A. Landsborough. Sport and Ornithology on the Baltic Coast. (Chambers's Journal, May 1913.)

Tschusi zu Schmidhoffen, V., *Ritter von.* Ankunfts- und Abzugsdaten bei Hallein, 1912. (Orn. Monatsch. xxxviii. 1913.)

Auk. (Vol. xxx. Nos. 1–2, 1913.)

Avicultural Magazine. (3rd Series, Vol. iv. Nos. 6–7, 1913.)

Bird Notes. (New Series, Vol. iv. Nos. 4–6, 1913.)

British Birds. (Vol. vii. No. 1, 1913.)
The Condor. (Vol. xv. No. 2, 1913.)
The Emu. (Vol. xii. pt. 3 (Suppl.) & pt. 4, 1913.)
Irish Naturalist. (Vol. xxii. Nos. 4–6, 1913.)
Journal of the Federated Malay States Museums. (Vol. v. No. 1, Kuala Lumpur, 1913.)
Journal für Ornithologie. (Vol. lxi. Heft 2, April 1913.)
Messager Ornithologique. (No. 1, Moscow, 1913.)
New York Zool. Soc. 17th Annual Report. (New York, 1913.)
Ornithologisches Jahrbuch. (Bd. xxiv. Heft. 1, 2, 1913.)
The Scottish Naturalist. (Nos. 17, 18, 1913.)
Zoologischer Anzeiger. (Bd. xli. Nr. 11–13; Bd. xlii. Nr. 1–4.)

XXVI.—*Letters, Extracts, and Notes.*

Mr. Bannerman's Expedition to the Canary Islands.—We have received the following letter from Mr. David A. Bannerman, who is at work on the less well-known islands of the Canary Group. He dates his letter from Haria, Lanzarote, on May 21th, 1913, and writes as follows:—

"So far I have had a most successful trip, and have got a good series of birds. I spent fifteen days in Fuerteventura, and worked round the north and centre of the island, making a wide detour to take in all the most likely places for birds. Needless to say, the island proved very interesting and to be more mountainous than I had expected to find. There is a central range which rises to about 2300 ft., and I passed over this at 1900 ft. between Santa Maria de Betancuria and Antigua, from which elevation I had a fine view of the immense plains which comprise the greater part of the island. The Bustard seems to be decidedly rare; I am afraid they have been sadly persecuted. I, however, had a good view of two pairs near Antigua. Mr. Meade-Waldo will be glad to hear that his Chat, *Pratincola dacotiæ*, seems to have decidedly increased its range, being no longer confined to the south-east.

"I met with them at Caldereta and Oliva in the north, at La Peña on the west coast, and at Antigua in the centre of the island. Moreover, they were exceedingly numerous in one of these places, and young birds fully fledged were flying about with the adults. The Fuerteventura Owl (*Strix flammea gracilirostris* Hartert) is very uncommon. The natives all know the 'Lechusa,' but say that it is not found in the places which it used to frequent. I hear as much as £5 has been offered for a single bird by some collector, and if this is the case, it is not surprising that they are rare. Of course they are doubtless more common than they appear, as one cannot depend on procuring Owls in a journey as rapid as mine. The Black Oystercatcher was not at Toston—an ideal spot for it, but I expect to meet with it shortly. Waders were numerous on the reefs. Turnstones in beautiful breeding-plumage, Dunlin, Grey Plover, Ringed Plover, Whimbrel, Redshank, Godwit, and Kentish Plover, the latter in swarms and breeding. From Toston I went by sea to La Peña, and had a very adventurous landing on almost perpendicular cliffs, with a huge sea and a climb which proved very stiff for my wife. My second boat with the cargo capsized further down the coast, but eventually everything was rescued, and none of the birdskins got wet. The valley of La Peña proved my best collecting-ground, and seed-eating birds were here very numerous, especially the Sardinian Warbler (*Sylvia m. leucogastra*), which frequented the tamarisk-bushes. Most of the birds in this island are very early breeders, but I have taken some eggs of late broods. I made five base-camps, and we travelled about 80 miles, so that I have seen a very considerable part of the island. The bird collection from Fuerteventura numbers 123, besides which we have mammals, butterflies, plants, grasses, eggs, and reptiles, so if all goes well I hope to have a fair series by my return. I arrived in this island (Lanzarote) a week ago, landing at Tinosa, and went to the lake called Lago Januvio, situated on the south-western coast close to the sea—the most desolate place I have ever been in, the only birds seen being Berthelot's Pipits, Hoopoes, Shrikes, Coursers, and Thick-knees. I found a huge flock of Turnstones on the shores of the lake itself and more Kentish Plovers breeding. The last day eight Grebes came in from the sea, and I watched them for a long time, but could not get at them ; they looked like the Eared Grebe. From here I went *via* Arrecеife to Teguise, and passed through very uninteresting country, utterly barren save for the corn which is grown in every possible place. I camped at Teguise, and from there came on to this place—Haria (1100 feet)—a beautifully situated town in a most fertile valley teeming with birds. I have met with the Tit (*Parus c. degener*) for the first time in this island and also the Spectacled Warbler. I stay here three more days, and then intend to work all the small islands if I can land on them. It has been dreadfully rough at sea lately. I have just been informed that Herr von Thanner has been taken ill at Alegranza and been obliged to return, so that I shall not meet him as I had hoped. He had apparently only just arrived.

"I forgot to mention that I had shot two Pratincoles on the plain near Arrecife—a rare visitor to these shores, I believe."

The return of Mr. Wollaston's New Guinea Expedition.—It was briefly announced in the last number of 'The Ibis' that Mr. A. F. R. Wollaston had succeeded in reaching the snow-line of Carstensz Peak at the end of February. Since then Mr. Wollaston has returned to England with Mr. Kloss and the collections, and has communicated the following brief report on his expedition :—

"The party consisted of Mr. C. B. Kloss, five Dyak collectors, and seventy-four Dyak carriers, with an escort, provided by the Dutch Government, of 130 men under the command of Lieut. Van de Water. We left Java on August 31, 1912, and arrived at the mouth of the Utakwa River on Sept. 18. In seven days all our stores were landed at our base-camp which was made about twenty miles from the sea, and a fortnight later we proceeded further up the river in six canoes which had been made by the Dyaks. Two days' paddling brought us as far as it was possible to go by water, and there a second permanent camp (Canoe Camp) was established. At a distance of three days' march from the river a third permanent camp (Observation Camp) was made in the foot-hills at about 2500 feet, and the collectors were sent there as soon as possible. In the middle of December, when sufficient stores had been accumulated at Observation Camp, a preliminary excursion of six marches was made into the mountains, and at the end of the month two collectors were camped between 4000 and 5000 feet. On the 18th of January we left Observation Camp, and in six marches reached a place (Camp 9, about 6000 ft.) where some of the collectors remained for about a fortnight and obtained a valuable series of birds. From Camp 9 three marches brought us to a point (10,500 ft.) from which we were able to reach the snow of Mt. Carstensz in one day. Above an altitude of 6000 ft. animal life becomes very scanty, and, excepting occasional Parrots and small flocks of Lories, very few birds were seen. Pipit-like birds were seen about 9000 ft., a Dove and a Thrush between 13,000 and 14,000 ft., and the droppings of a game-bird, presumably the one found by Lorentz on Mt. Wilhelmina, were seen near our camp at 10,000 ft. Two collectors spent five days in a camp about 8000 ft., where they obtained several birds of great interest. The difficulty of carrying food into the mountains made it impossible to remain for a long period at a high altitude, and we were obliged to return to the Observation Camp on Feb. 10. Three collectors stayed at a camp between 5000 and 6000 ft. until the beginning of March, after which the whole expedition began to return to Canoe Camp and eventually to the base-camp. A Government steamer carried the expedition away on April 3, and on April 13 we left Amboina in the mail-steamer for Singapore. During the time that we were in the mountains we were almost constantly accompanied by some of the native people who live between 4000 and 6000 ft. They were exceedingly friendly people, and were of the greatest assistance to us in shewing us their tracks through a very steep and difficult country. They are destitute of clothing, and their weapons are bows and arrows, stone axes, and stone knives. They cultivate sweet potatoes and a little tobacco and sugar-cane; they appear to be in some ways more intelligent than the coast people, with whom we had occasional trouble.

"In general the health of the expedition was very good, and we were fortunate in not having a single case of beri-beri, which was so serious a feature of the B.O.U. Expedition to the Mimika River.

"A more extended account of this expedition will be given in a future number of 'The Ibis,' when the descriptions of the new species of birds are published.—A. F. R. W."

At the last Meeting of the British Ornithologists' Club, held on Wednesday, June 11, the collection of bird-skins, numbering about 1300 in all, were exhibited; as they had only been unpacked on the day previous to the Meeting it was impossible to say how many were novelties, but in the current number of the 'Bulletin' of the Club five forms are characterized as new by Mr. Ogilvie-Grant.

In addition to the birds some 150 mammals, a large number of snakes and other reptiles, and several thousand insects were obtained, as well as a very extensive collection of ethnological objects, including about 50 specimens of the stone knives used by the natives in the regions visited by the expedition.

It is to be hoped that it may be possible to make arrangements for publishing a complete account of the scientific results of the two Dutch New Guinea expeditions in a series of volumes so as to form a permanent memorial of the undertaking. This it may perhaps be possible to effect by the co-operation of the British Ornithologists' Union with other scientific bodies interested in the results other than ornithological.

Bird Protection in the United States.—The November–December number of 'Bird Lore' contains the Annual Report of the National Association of Audubon Societies for 1912. This organization not only coordinates and directs the work of the State Audubon Societies, which deal with the problems of the protection of birds in the individual States, suggesting legislation and endeavouring to compel observance of the laws when made, but also directly employs a number of wardens or guardians who have charge of the numerous state and federal reserves scattered chiefly along the eastern and southern coasts of the United States.

That the work is carried out on a large scale is evidenced by the accounts, which show that over £6000 has been expended during the year on Warden service, Legislation, and Educational efforts.

It is a matter for congratulation that these efforts have not been in vain, as can be seen from the various reports here printed, which show that Egrets and other birds formerly on the verge of extinction through the ravages of plume-hunters and others, are now rapidly recovering their numbers in reserves as well as in other colonies known to exist in the southern States from Texas to Florida.

Life-History of North American Birds.—A good many years ago the late Major Charles E. Bendire planned a work on the above subject in co-operation with the Smithsonian Institution. After the publication of two volumes, in which he dealt with the groups from the Gallinæ to the Icteridæ—the birds numbered 289 to 513 of the old edition of the A. O. U. Checklist—Major Bendire died leaving the work incomplete, though what was published contains a mass of most useful information not to be found elsewhere.

Mr. A. C. Bent made arrangements with the Smithsonian Institution in 1910 to complete Major Bendire's work, and has been amassing information for the last twenty years for this purpose. He has travelled extensively over the greater part of Canada and the United States, from Labrador to Alaska and from California to Florida, collecting information and making observations, and he now appeals to American ornithologists in a circular, of which a copy has been sent to us, to assist him.

He proposes first of all to issue a volume containing the Life-Histories of the Anatidæ, and if any of our readers can supply him with first hand observations on such points as Migration, Mating, Nesting-habits, Plumage-sequence, Moult, Food and Flight-habits he will be very grateful.

All correspondence should be addressed to Mr. A. C. Bent, Taunton, Massachusetts, U.S.A.

'The Emu' in London.—Messrs. Witherby & Co. have been appointed European agents for 'The Emu,' the organ of the Royal Australasian Ornithologists' Union, and copies of that publication can now be obtained at 326 High Holborn, W.C.

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¶ INDIAN PIGEONS AND DOVES, by E. C. STUART BAKER, M.B.O.U., is to be a companion volume to the same author's well-known *Indian Ducks*. It will be well illustrated with about 30 coloured plates by Messrs. Lodge and Grönvold, and will be ready, it is hoped, before the end of the present year.

¶ MY GAME-BOOK, by ALAN R. HAIG-BROWN, is a pleasantly written book of reminiscences connected with gun and rod, and will be ready in the early autumn.

¶ Messrs. Witherby are also engaged upon a very large and important work on the PHEASANTS, by Mr. C. W. BEEBE. This work will be superbly illustrated with photogravures from photographs, and with coloured plates from pictures by Messrs. Fuertes and Grönvold, Major Jones, Messrs. Knight, Lodge and Thorburn.

¶ Messrs. Witherby also have to announce that they have been appointed ***English Agents*** for ***THE EMU,*** the Journal of the Royal Australasian Ornithologists' Union. ***The Emu*** is well illustrated, and is published quarterly (4/- per part, Annual Subscription 15/-).

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XXVII.—*Notes on Birds around Mpumu, Uganda.*

By L. M. Seth-Smith, B.A., M.B.O.U.

(Plates X. & XI.*)

Mpumu is a hill some fifteen miles due east of Kampala and about four miles from the Victoria Nyanza.

The country round about is hilly, and in the valleys run streams which are lined with thick forest. Most of the hills are covered with short grass, while a few have forest growing to the tops. The intervening country is mainly composed of elephant-grass, with patches of forest here and there. The rainy seasons are from March to May and again from September to November.

The classification and nomenclature followed are taken from Shelley's List in the first volume of his 'Birds of Africa,' except where a special reference is given.

1. **Nectarinia kilimensis.** This is by no means a common bird.

2. **Cinnyris cupreus.** This is probably the commonest Sun-bird, though I have not come across its nest. The males are in perfect plumage and breeding condition in June.

---

* For explanation of Plate X. see p. 508.

3. **Cinnyris superbus.** Only one was seen, on May 16, which proved to be a male coming into colour.

Iris dark brown; feet black; bill black.

4. **Cinnyris chloropygius.** Common round the outskirts of forest. A nest found on September 22 was suspended at the end of a twig about six feet from the ground. The nest was composed of grass and lined with vegetable down, lichen being attached to the outside. The two eggs were greenish white with a ring of brownish-grey blotches round the thicker end.

5. **Chalcomitra acik.** After *C. cupreus* this was found to be the commonest Sun-bird. The nest, a very untidy and old-looking structure with ends of dry grass hanging from it, is usually placed in a conspicuous position from five to ten feet from the ground. There appear to be two breeding-seasons, as I have records of nests in May and June and again in October. The nests which I have noticed have only contained one egg or a single young bird. Two very different types of eggs are figured (Plate X. figs. 4 & 10).

6. **Cyanomitra cyanolæma.** This bird was only seen on one occasion, when it attracted my notice by its continual chirping, fairly high up in thick forest. There was a pair with their young, which, though well able to fly, were still being fed. This was in September.

7. **Cyanomitra obscura.** Not uncommon in forests.

8. **Cyanomitra verticalis.** Common both in forests and in the open country in the neighbourhood of forests.

A pair obtained in March showed every sign of wishing to nest. I have mistaken these birds for Warblers whilst they were hopping about among thick undergrowth, evidently searching for insects.

9. **Anthothreptes hypodila.** A common bird on the outskirts of forests. The nest, usually from five to eight feet from the ground, is composed of fine grass or rootlets interwoven with small pieces of grass and lined with down; the

two eggs (Plate X. figs. 2 & 3) are a dull white, spotted all over with dark grey or brown, more thickly at the larger end. The only nests I have noticed have been in May, although a young bird, still being fed by its parents, was obtained on September 7.

10. **Anthothreptes tephrolæma.** Only obtained once.

11. **Zosterops senegalensis.** A very common species. Its beautiful hanging nest is always placed in a conspicuous position. I have found nests in April, May, and June. The eggs, generally two, but occasionally three in number, are usually pale blue, though sometimes white.

12. **Parus leucomelas.**

Parus leucopterus (nec Swains.); Shelley, Birds Afr. i. no. 115.

Never abundant, though noticed fairly frequently. A bird in breeding condition was obtained in March.

13. **Parisoma plumbeum.** This is by no means an uncommon species; its plaintive notes can often be heard, though the bird itself is not very often seen, as it frequents thickish bush and its note is ventriloquial. Birds in breeding condition have been obtained in May and June.

14. **Motacilla vidua.** Ubiquitous and always welcome with its brilliant song. It is one of the tamest of birds, frequently walking into one's house, and usually to be seen within a few inches of the natives' hoes when digging. It nests in the thatch of buildings, and is a common host for *Cuculus solitarius.* Nests in April and May.

15. **Motacilla flava.** A common visitor from September to April. Sometimes to be seen in hundreds.

16. **Anthus trivialis.** A common visitor from October to March.

17. **Anthus gouldi.** Common. Birds in breeding condition have been procured in February and again in July.

18. **Macronyx croceus.** Fairly common in short grass.

19. **Mirafra fischeri.** Not uncommon in the short grass country. A male in breeding condition was obtained in the middle of May.

20. **Emberiza flaviventris.** Only one was seen, on August 21.

21. **Passer diffusus.** A common bird round habitations, having the same habits as *P. domesticus*. It usually nests in thatch, though occasionally builds in trees or in holes or nests of *Hirundo puella*. I have found nests in April, June, and August. The eggs, usually four in number, are typical Sparrows' eggs.

22. **Chrysomitris frontalis.**

Spinus citrinelloides frontalis Reichw., Vög. Afr. iii. 1904, p. 276.

The nest of this species is placed in between the fruit of a bunch of bananas, being almost hidden from below, and is composed of fine grass and down, the outside being cotton. The eggs (Plate X. fig. 5), two in number, are greyish, finely dotted with dull purple, more thickly at the larger end. They nest in May.

23. **Serinus sharpei.**

Serinus sharpei Neumann, Journ. Ornith. 1900, p. 287.

A fairly common bird. Like *Chrysomitris frontalis* it nests in bunches of bananas. The eggs are very pale blue, with a few dark brown spots at the larger end. These are to be met with in October.

24. **Vidua principalis.** A very common bird.

25. **Coliuspasser ardens.** Not uncommon. Probably nests in April and May.

26. **Coliuspasser concolor.**

Coliuspasser concolor (Cass.); Shelley, B. Africa, iv. 1905, p. 44.

The same remarks apply as to *C. ardens*, and I believe its nesting-time is the same, though I have not found the nests of either species.

27. **Urobrachya phœnicea.** Common, though local. It seems to prefer swampy districts, and nests in April and May.

28. **Pyrenestes ostrinus.** Only seen once, on 5 April, 1912, nesting. The nest was very large and untidy-looking, composed of coarse grass woven together, with loose ends sticking out and hanging down, and was lined with fine grass. It was placed on a bare branch overhanging a road and difficult to get at, with the result that two out of three white eggs (Plate X. fig. 8) were broken in securing them. The male bird was at the time sitting, the female was not seen.

29. **Nigrita schistacea.** A common bird. It has two nesting-seasons, one in May and June and one later in October. Its nest is a very large untidy structure, built from ten to twenty feet from the ground and composed of fibre surrounded by dead leaves and strips of banana-leaves, the entrance being at the side. Four eggs form the clutch; these are pure white, but look pinkish when fresh, owing to the yolk showing through.

30. **Nigrita fusconota.** This bird is common in the forests. It breeds in August, but I have no notes of its breeding-habits. A young bird in immature plumage obtained in September was not unlike the adults, but the head was dark brown and not blue-black, and the rump was jet-black with no trace of the steel-blue.

31. **Spermestes cucullatus.** Abundant everywhere. The nest is either built in a bush in the usual oval shape, composed of grass heads with a short tube as an entrance at the side, or an old Weavers' nest, relined with grass heads, is made use of. The nesting-season is mainly confined to the months of April, May, June, and July, although odd nests may be found, I believe, during most of the year. Their

roosting-quarters are old nests, either their own or those of Weavers, into which they crowd sometimes as many as ten or more together.

32. **Estrilda paludicola.** A common bird in swampy ground. I found a nest of this species (on 2 January, 1905, at Entebbe) built on the ground among long grass. It was composed of grass, and of the usual circular form with a hole in the side. I have obtained young of this species, evidently only just out of the nest, in May.

33. **Estrilda nonnula.** Common in all the native gardens and in forests. The nest is of the usual Grass-Finch type, built from three to eight feet from the ground with a projecting tube, but has the addition of a second and smaller nest above. This is said to be for the cock bird, but is it not possibly a blind for enemies? The tube is almost closed, while the upper nest is easily seen into and would appear empty. It nests either in the middle of forest or in bushes and gardens in April and May and probably again later, as I have found young just out of the nest in September.

34. **Estrilda minor.**

Estrilda minor (Cab.); Shelley, B. Afr. iv. 1905, p. 198.

Common. Nests in April and May.

35. **Lagonosticta rhodoparia.** Not uncommon. I have never found its nest.

36. **Lagonosticta brunneiceps.** Very common everywhere. Nests in outbuildings, the nest being composed of grass and feathers.

37. **Spermospiza rubricapilla.** Seen once or twice, but by no means common. The nest was once found on 6 October, 1911, in the fork of a small thorny tree ten feet from the ground in a very conspicuous position in the forest. It was very untidy, composed of coarse grass and lined with fine grass, the whole covered with loosely hanging dry ferns. The birds were very shy, and never came near the nest while

I was watching. The nest came to an untimely end, and was found to contain three newly hatched birds. I have seen several of these nests since, usually in the same kind of thorny tree, but always old ones.

38. **Clytospiza monteiri.** Not common, seen once or twice in grass-country.

39. **Malimbus rubricollis.**

Malimbus rubricollis (Swains.); Shelley, B. Afr. iv. 1905, p. 346.

Not very common. These are delightful birds to watch in the forests, climbing about and often hanging on the undersides of the branches.

40. **Pachyphantes superciliosus.** Not very common. Young birds were obtained in June.

41. **Melanopteryx nigerrima.** Very common. These birds start nesting in late February and March, again in May, and later in the year in September. Nests are composed of either grass or the leaves of palms.

The males at times breed before they have come into full plumage. The males do all the building, and the females only occasionally visit the nests while they are in course of construction. The eggs are invariably blue (Plate X. fig. 6). The branches on which the nests are built are usually stripped of all leaves several feet back from the nest.

42. **Heterhyphantes nigricollis.** A common bird. Usually found in pairs. The nests, always found singly, are usually slung on elephant-grass and are built in April, May, and June. They have an entrance-tube about eight inches long.

The eggs vary enormously both in colour and size. They are found from unspotted pale blue to blue spotted with brown, then changing to a pinkish ground-colour, slightly spotted, up to heavily blotched, with red-brown. The clutch is either two or three.

43. **Hyphanturgus ocularius.** Not very common. Usually found near water. The nests, which I have found in April and August, have a longish entrance-tube. The eggs, two in number, are bluish with dull brownish-grey spots all over.

44. **Hyphanturgus stuhlmani.** Not very common.

45. **Sitagra pelzelni.** Probably not uncommon near the lake. A nest, believed to be of this species (but the bird, though seen, was not obtained), was taken on April 4. It was hanging from a single creeper and was very untidy and small, not unlike that of *Chalcomitra acik*. It contained two small white eggs.

46. **Xanthophilus xanthops.** Not at all common. This bird was nesting in April. The nest had no entrance-tube and was woven on to elephant-grass. Two other nests, evidently of the same species, were built within a few yards of the one occupied, but only the one pair of birds was seen. The clutch was composed of two eggs (Plate X. fig. 16) with a greenish-blue background spotted all over with brown.

Another similar nest was found on the same day with two pure white eggs in it, and the bird seen, but not obtained. In this case also two other nests were near by, but only the one was in use.

47. **Hyphantornis abyssinicus.** Common, but by no means abundant. This bird almost invariably nests with *Melanopteryx nigerrima* in the same colony.

48. **Hyphantornis weynsi.**

Hyphantornis weynsi (Dubois); Shelley, B. Afr. iv. 1905, p. 432.

These birds are found in flocks feeding on wild figs in July and August in the forests, or seen flying to roost in flocks. I am inclined to think that they are strictly forest-birds. I have not obtained any females, although I have looked carefully for them when the birds are feeding and have shot what turn out to be immature males. The males at this time of year are in breeding condition, but I have never yet found the nests. When feeding they are very noisy, and sound like a colony of *Melanopteryx nigerrima* building.

Iris bright yellow; feet brown; bill black.

Imm. Iris dull brown; feet brown; bill brown.

49. **Hyphantornis dimidiatus fischeri.** Not very common. Nesting in March and April on elephant-grass. Of the only two nests I have found, one contained light blue eggs spotted with brownish, the other reddish-brown eggs. The clutch was two in each case.

50. **Cinnamopteryx interscapularis.**

Cinnamopteryx interscapularis (Reichw.); Shelley, B. Afr. iv. 1905, p. 361.

Only one seen, a male coming into colour, the chocolate on the breast being only shown by a few feathers. Iris dark chocolate.

51. **Oriolus brachyrhynchus.** Not very common, but its rich notes are occasionally heard.

52. **Pholidauges verreauxi.** This bird does not, as far as I know, breed here, and I have only noticed it from the end of April to the end of August, none of my birds being in breeding condition.

One obtained on April 28 is a male coming into colour. The primaries, coverts, and tail have changed to the adult plumage, the back having a few new feathers, while the head has not yet begun to show them. They go about in flocks of from six to eight, and have the habit of flying from a branch to catch an insect and returning to the same spot.

53. **Lamprotornis splendidus.**

Lamprotornis splendidus (Vieill.); Shelley, B. Afr. v. 1906, p. 65.

Common. Every evening a noise like a distant express train can be heard as these birds fly overhead in large flocks to their roosting-grounds. Flock after flock passes over. They are very noisy and extremely shy birds.

54. **Corvultur albicollis.** By no means a common bird.

55. **Dicrurus afer.** Now and then seen. When watching a large Owl roosting one day, one of these birds came and drove it off.

56. **Campophaga phœnicea.** Occasionally seen. A pair were noticed for several days towards the end of March flying from tree to tree uttering their harsh bell-like note, but I was unable to find the nest for some days, though I watched them carefully. The nest was practically hidden in the fork of a leafless tree, and was composed of tree-moss and lichen bound together by spiders' webs. The eggs (Plate X. fig. 11), two in number, were yellowish green spotted with purplish. The flight of this bird is up and down like a switchback, and it usually utters its note while on the wing.

57. **Lanius mackinnoni.** Not at all common. An immature specimen was secured in June.

58. **Dryoscopus jacksoni.**

Dryoscopus jacksoni Sharpe, Bull. B. O. C. xi. 1901, p. 57.

Only noticed a few times.

59. **Laniarius æthiopicus ambiguus.** Not common. A female in breeding condition was obtained in June.

60. **Bocagia minuta.** Not uncommon in the grass-country.

61. **Nicator chloris.** Fairly common in the forests. Breeds in April, when it utters some fine resounding notes.

62. **Pycnonotus layardi.** Very common everywhere. Nests at heights varying from two to forty feet from the ground. The nest usually rests in a fork of a tree or bush, but on one occasion I found one hanging like that of a Whiteye, the top edges being woven on to twigs. The bird was shot to ensure identification. It builds in April and May.

The eggs have a pink ground-colour, spotted all over, more heavily at the larger end, with red.

63. **Andropadus virens.** A very common forest-species, usually skulking in the undergrowth, but also seen higher up among the larger branches. It builds close to the ground, the nest being composed of dead leaves and coarse grass and lined with fine grass. The eggs are very much like those of *Pycnonotus layardi*, but are more shiny.

64. **Andropadus latirostris.** Only one obtained, a female in breeding condition in May.

65. **Andropadus curvirostris.** One obtained, out of breeding condition, in September.

66. **Andropadus gracilirostris.**

Andropadus gracilirostris Strickl.; Reichenow, Vög. Afr. iii. 1904, p. 411.

A male obtained in September. Iris blood-red.

67. **Bleda pallidigula.**

Xenocichla pallidigula Sharpe, Bull. B. O. C. vii. 1897, p. vii.

Not very uncommon. A nest was found on April 16, about ten feet from the ground, in a thicket composed entirely of small twigs. There were two eggs (Plate X. fig. 19) of a dirty white, heavily blotched all over with dark brown. Iris yellow.

68. **Criniger albigularis** One female obtained in forest ready for nesting, 24 May, 1912.

69. **Turdinus cerviniventris.**

Turdinus cerviniventris Sharpe, Bull. B. O. C. xii. 1901, p 3.

One male in breeding condition, but very poor plumage, obtained in forest on May 21.

70. **Hylia prasina.** A female shot on July 3 was evidently sitting, as the tail-feathers were curved round. This was the only bird noticed and was in thick forest.

71. **Camaroptera tincta.** This Warbler is by no means uncommon. It is a regular tailor-bird, sewing two leaves

together and building its nest in between. It builds in May and June, and a nest found contained one pure white egg of *Chrysococcyx klaasi* or possibly *C. cupreus,* as well as one of the Warbler itself (Plate X. fig. 1).

72. **Sylviella carnapi.**

Sylviella carnapi Reichw., Orn. Monatsb. 1900, p. 22.

By no means common, although, owing to its skulking habits, it is doubtless often overlooked.

73. **Sylviella baraka.**

Sylviella baraka Sharpe, Bull. B. O. C. vii. 1897, p. vi.

Fairly common among the undergrowth in thick forest, though more often heard than seen.

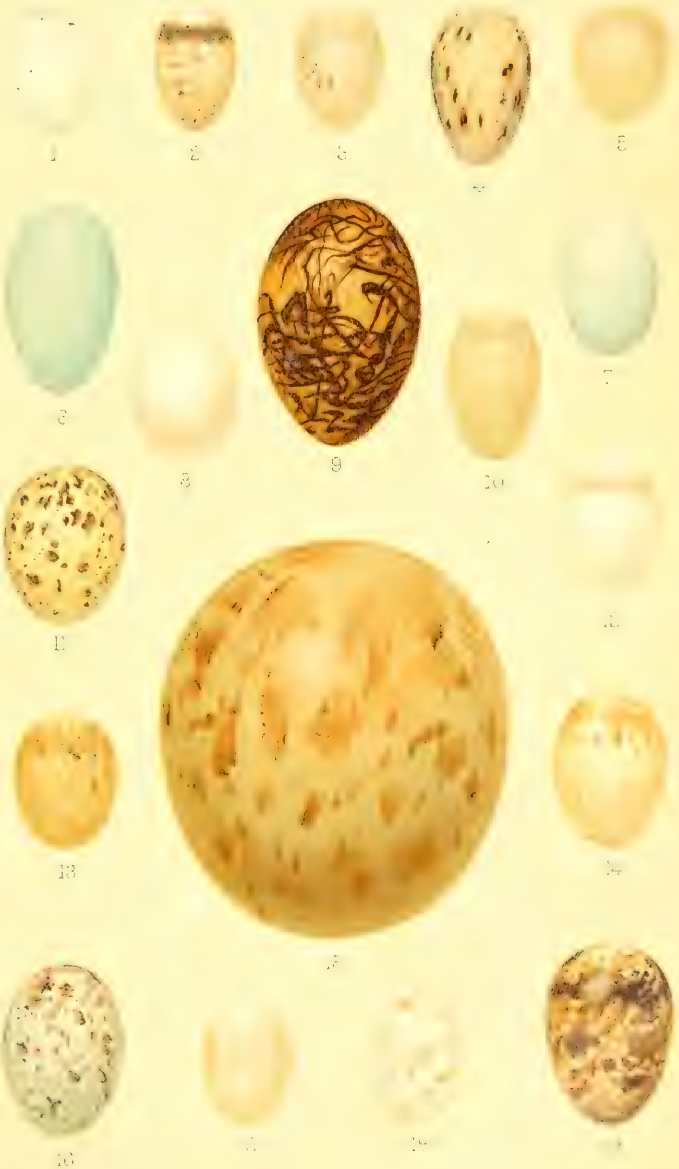
74. **Eminia lepida.** Only seen once, but, being a forest-bird and very shy, is probably not so very uncommon.

75. **Apalis cinerea.** A male in breeding condition was obtained in June among the top branches of a high tree in forest. This and the next species are, I fancy, common, but they keep too high in the trees to identify or to obtain, and I have wasted many cartridges in trying to bring them down.

76. **Apalis rufigularis.** The habits of this bird are similar to those of the last species.

77. **Apalis jacksoni.** This beautiful bird was only noticed once—a family group searching for insects among the branches of forest-trees, but not very high.

78. **Burnesia reichenowi.** Probably the commonest Warbler in the district. It is to be found both in forest and outside, but should, I think, be considered a forest-bird. It is usually to be seen in parties searching for insects and continually twittering. The male when courting throws his tail right up over his back. It builds in May and June, the nest being constructed between two leaves sewn together (Plate X. fig. 18).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EGGS OF AFRICAN BIRDS.

79. **Prinia mystacea.** Nests from March to June and again in September, the nest being sewn into leaves and being composed of very fine grass. The eggs, two or three in number, vary very much, some being pale blue and others greenish, spotted or blotched with reddish brown.

80. **Cisticola sylvia.**

Cisticola sylvia Reichenow, Orn. Monatsb. 1904, p. 28.

This species builds near the ground in a clump of grass, the nest being composed of coarse grass and lined with thistle-down. The eggs (Plate X. figs. 7, 12) vary, some being pale blue unspotted and others white speckled round the larger end with reddish. The complement is two or three, and they are laid in April and again in September.

81. **Cisticola strangii.** Common. Nests in June.

82. **Cisticola lateralis.** Common in the short grass. I shot a male of this species and a female of *C. sylvia* at the same nest, and believed them to be a pair. I now find that all the specimens of *C. lateralis* which I have at different times obtained are all males, and the few I have of *C. sylvia* are all females. On looking through these species at the Natural History Museum, my theory that they might be the same species is not borne out altogether, and I expect that I was wrong, and that a *C. lateralis* happened to come near the nest of *C. sylvia* while I was watching; but I hope to have another chance of satisfying myself before long.

83. **Cisticola rufa.** Fairly common. A breeding male was obtained in February.

84. **Cisticola erythrops.** Not very common.

85. **Melocichla mentalis.** Not common. A breeding male was shot in May.

86. **Schœnicola apicalis.** Males in breeding condition were obtained in March and June. This is a very conspicuous bird when flying, but it usually only goes a few yards before taking cover in thick grass, where it skulks about.

87. **Phylloscopus trochilus.** Common from November to March. I have one specimen dated March 31 (testes large). This seems to be a very late date. Is it possible that a few pairs remain to breed in these parts? The testes or ova are usually so small as to make it very difficult to tell the sexes.

88. **Phylloscopus sibilatrix.** Not often noticed.

89. **Sylvia simplex.** Not at all common.

90. **Stizorhina vulpina.** Not uncommon in forest.

91. **Cossypha melanonota.** An extraordinary songster and mimic. On one occasion I thought I heard a Guinea-fowl (*Numida ptilorhyncha*), and was moving in its direction when it changed its note to that of *Cuculus solitarius* and then to that of *Cuculus clamosus* and then to its own song, and I recognized this *Cossypha*. I found a nest on May 23 in a thick bush about three feet from the ground. It was lined with rootlets, and contained three dark olive eggs. A bird just out of the nest, believed to be this species, was brought to me on June 4.

92. **Cossypha natalensis.** A nest found on May 1 in a crevice in the trunk of a tree about three feet from the ground was, I believe, that of this species; but, unfortunately, the bird was not obtained, though it was seen at close quarters. The three olive eggs were hatched, but later disappeared, being probably taken by squirrels or some other small mammal.

93. **Cossypha polioptera.** This rare bird has only been obtained on a few occasions. It is a very shy forest-bird, and the only one obtained in this district was a female shot in June.

94. **Cossypha somereni.**

Cossypha somereni Hartert, Bull. B. O. C. xxxi. 1912, p. 3.

Dr. Hartert has kindly compared a bird I obtained with his type and so named it. I find it difficult to distinguish however, between *C. polioptera* and *C. somereni*. Both my birds have black tips to the feathers of the supercilium. My specimen of *C. somereni* is more grey on the back, but is evidently an older bird. The wing also is longer, but in most, if not all, of the *Cossyphæ* the male has a longer wing than the female, and the fact of the birds coming from the same district (the type of *C. somereni* was obtained in this locality) seems to point to their being identical.

95. **Pratincola rubetra.** Very common. I have no definite records of its arrival and departure, the earliest date of a specimen being November 25 and latest March 24.

96. **Pratincola axillaris.** Common.

97. **Turdus pelios.** Common in all the native gardens. This bird has a song very similar to that of *Turdus musicus*. It builds very frequently on the top of a growing bunch of bananas of a kind the fruit of which turns upwards, and so forms an ideal spot for the nest; this is built in April or May, and is formed of coarse grass mixed with mud outside and lined with rootlets. The eggs, usually three in number, are bluish green blotched all over with reddish brown.

98. **Melænornis pammelæna.** Fairly common. I have not found the nest, but have shot birds in breeding condition in the middle of February and young not long from the nest in April.

99. **Muscicapa brevicauda.**

Muscicapa brevicauda O.-Grant, Bull. B. O. C. xix. 1907, p. 107.

On 2 June, 1912, I noticed a Weaver's nest hanging from a single creeper, and, wishing to get the bird, I waited about, but did not see any Weavers in the neighbourhood. There was, however, a pair of *M. brevicauda* in a very excited mood evidently nesting near by, and while watching I saw one of them go into the Weaver's nest. On examination I found that the Flycatchers had built a nest inside that of the Weaver. The Flycatchers' nest was composed of coarse grass and lined with fine grass. It seemed extraordinary that a Flycatcher should select such a site as the only entrance was from below up a tube some four or five inches long. There were, unfortunately, no eggs in the nest.

Later, on June 16, seeing a pair of these birds apparently nesting, and noticing two old Weavers' nests near by, I again discovered one with the nest of the Flycatcher within it, but again no eggs.

On a third occasion, June 28, I discovered two fully fledged young of this species in a very old Weavers' nest which was almost in pieces.

100. **Muscicapa grisola.** Fairly common on migration.

101. **Alseonax murina.** Not very common. A male in breeding condition was obtained in the middle of May.

102. **Alseonax griseigularis.**

Alseonax griseigularis Jackson, Bull. B. O. C. xix. 1906, p. 19.

Only one obtained—a male in breeding condition, March 26. This species would appear to be more correctly placed in the genus *Muscicapa*.

103. **Bias musicus.** Not uncommon. A fine songster in the breeding-season, which is from March to May, and at this time it will drive away most birds which approach anywhere near the nest. I have seen them time after time chasing a pair of Orioles, probably *Oriolus brachyrhynchus*, which appeared to be thinking of nesting themselves.

104. **Megabias æquatorialis.**

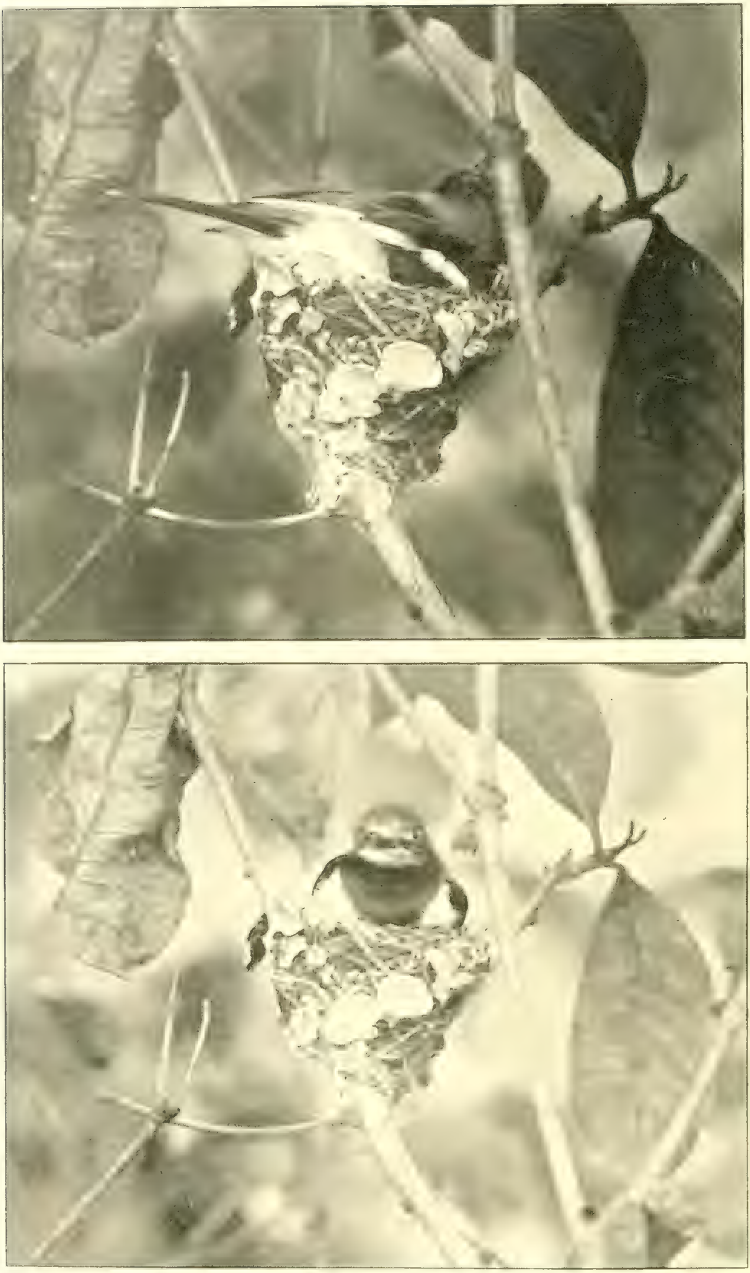
Megabias æquatorialis Jackson, Bull. B. O. C. xv. 1904, p. 11.

Not common. A male in breeding condition was obtained on April 28.

Iris blood-red; feet purplish; bill black.

105. **Diaphorophyia castanea.** Not common. A pair in breeding condition was obtained on April 28. These birds make a sharp clicking with their wings as they flit about.

106. **Platystira cyanea.** Fairly common. Nesting on April 25 in the fork of a tree some twelve feet from the



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ground. The nest (see Plate XI.) was very small, composed of grass bound with spiders' webs with bits of lichen attached. The eggs (Plate X. fig. 13) are two in number, of a brownish-white ground with purplish-brown spots, thickest at the larger end.

107. **Pachyprora orientalis.** Not common.

108. **Elminia longicauda.** This handsome Flycatcher makes a most beautiful nest covered with lichen, usually about six feet from the ground. It lays two eggs (Plate X. fig. 17) of a somewhat dirty white ground-colour, with grey spot, forming a band round the thick end.

109. **Terpsiphone emini.** Fairly common in the native gardens and forest. It builds a small nest in April, May, or June. The eggs (Plate X. fig. 14), two in number, are pinkish white with reddish spots and blotches, more thickly disposed round the larger end.

110. **Hirundo arcticincta.** Common. Nests in March and April.

111. **Hirundo senegalensis.** Fairly common.

112. **Hirundo rustica.** Common.

113. **Hirundo puella.** One of the commonest and tamest of the Swallows. I obtained one specimen with the outer tail-feathers over 6·5 inches long, which is 2·5 inches longer than any others that I have seen.

114. **Hirundo christyi.**

Hirundo christyi Sharpe, Bull. B. O. C. xvi. 1906, p. 86.

Found only in swamps, frequently resting on the reeds. I have only noticed it from April to June.

115. **Psalidiprocne albiceps.** A common Swift.

116. **Cypselus caffer.** Fairly common.

117. **Caprimulgus natalensis.** Common. Breeds in June and July.

118. **Cosmetornis vexillarius.** A female shot in August was very fat. I have not seen the male in full plumage in this part of Uganda, and I do not think they nest here.

119. **Hapaloderma narina.** Only seen once in thick forest, where I was attracted to it by its curious note, a soft rather rapidly repeated "coo," which was unknown to me. . The bird, a male, was in breeding condition.

120. **Eurystomus afer.** A fairly common bird, usually seen in pairs, hawking, often at a great height, for insects. It is always more in evidence in the evening from about sunset till dark. In March it nests in holes in trees on the soft pulp of rotten wood. Two eggs are laid; these are of a rather shiny white, which gets very dirty during incubation.

121. **Mellitophagus variegatus.** Never seen in any numbers.

122. **Merops albicollis.** Common. I have seen this bird on one occasion catch and eat a large blue butterfly.

123. **Merops superciliosus.** Fairly common.

124. **Upupa africana.** Not seen by me in this district, though one was observed near by on Jan. 5.

125. **Bycanistes subquadratus.** This noisy and ungainly bird is very common. I watched a cock feeding the hen at its hole early in March. I also shot an immature bird still being fed by the parent on April 21. The iris of the young bird was grey and feet dark grey. On one occasion I noticed a pair of these birds flying out time after time from a tree, catching white ants as they flew past. They looked most awkward while performing this feat.

126. **Lophoceros fasciatus.** Common. A bird was noticed for days towards the end of April carrying food into the forest. It would never fly more than 100 yards at a time when returning with food. By following it up, the hole was easily found and a native sent up, but he could not get his hand

into the hole, and, after being pecked by the hen inside, I could not get him to go up again. The hole was some thirty-five feet up, the tree being without branches up to this height.

127. **Ceryle rudis.** Common around the lake. A nest was found on September 1 close to the lake in a hole in a bank; it contained five white eggs almost due to hatch.

128. **Ispidina picta.** Fairly common.

129. **Halcyon malimbicus.** A forest-bird, not often seen.

130. **Halcyon cyanoleucus.** A breeding male was obtained in May.

131. **Halcyon chelicutensis.** A nest was seen on August 13, some thirty-five feet high, in a hole at the end of a dead branch. The chattering of the young birds called my attention to it, and one young bird, leaving the nest before it could fly properly, was caught. The hole appeared to be perfectly round like a Woodpeckers'.

These birds were also nesting at the top of the verandah-post of a double-storey building in Mombasa in March.

132. **Colius affinis.** Common. They seem to nest during most of the year. I have found them in January, May, June, and October. The clutch is two or three.

133. **Turacus emini.** Not at all a common bird. I have only noticed it once.

134. **Musophaga rossæ.** Fairly common.

135. **Corythæola cristata.** Very common. Its resounding notes can be heard anywhere where there is forest. It is interesting to watch these lovely birds swooping one after the other (they usually go about in groups of eight or ten birds) from the top of one tree to about halfway up the next, and then characteristically hopping and running up the branches to the top. By the time number one is up at the top number two has just reached the tree and number three is just leaving the top of the last tree, and so on.

136. **Ceuthmochares æneus.** Common. Skulking about in the tops of thick forest-trees. A breeding female was shot in July.

137. **Centropus superciliosus.** Fairly common in the bush and grass country. A young one, only just able to fly, was seen on May 25.

138. **Cuculus solitarius.** This common Cuckoo is to be heard day and night from January to September. It is a very shy bird and not easy to obtain, although one for some weeks in February came every day and perched on a bare tree not ten yards from where I was sitting on my verandah and uttered its call, now and then flying down on to the ground to pick up a hairy caterpillar. It lays in May and June, and *Motacilla vidua* is a common host.

139. **Cuculus jacksoni.**

Cuculus jacksoni Sharpe, B. O. C. xiii. 1902, p. 7.

Very little is known about this rare bird. I obtained one on May 4, late in the evening, calling just outside a forest. I believe it to be entirely a forest-bird and very shy, only leaving the depths of the forest for the outskirts in the late dusk. When I obtained this bird I did not take particular note of its call, as I believed it to be *C. clamosus*—any way the calls are not very distinct.

140. **Cuculus clamosus.** A forest-bird, not often noticed until dusk, when it may be heard frequently. Its call is very distinct from that of *C. solitarius*, whose third note falls, whereas in this species it rises in tone, the three notes being uttered slowly and the last note often repeated. It has also a harsh chattering call of several notes, rapidly uttered, running up the scale and down again. A very shy bird.

141. **Cercococcyx mechowi.** Another rarity, of whose habits practically nothing is known. The only one I obtained in this district was in thick forest, very late in the evening. I was just able to see it outlined against the sky after it had flown past me. A lamp had to be fetched before it could be found.

142. **Chrysococcyx klaasi.** Fairly common. A white egg of either this species or *C. cupreus* was found in the nest of *Camaroptera tincta* in June.

143. **Chrysococcyx cupreus.** Very common. Lays in March, April, and May. I have never seen the young being fed by foster-parents. A female shot in May dropped a light blue unspotted egg on being handled, which unfortunately broke.

144. **Melanobucco æquatorialis.** Not often seen.

145. **Tricholæma ansorgii.** Common throughout the forest. When wild fig and other fruit-trees are bearing, these birds are to be found in numbers.

146. **Heliobucco bonapartii.** Only seen once—a male in breeding condition in February.

147. **Barbatula duchaillui.** A pair of these birds reared a family in a hole some twelve feet from the ground in the middle of forest in February. By no means common.

148. **Barbatula scolopacea.** Very common, breeds in May.

149. **Barbatula subsulphurea.** Not uncommon. A nest with one white egg partially incubated was found at the end of May, about ten feet from the ground, in a small hole at the end of a rotten branch. The hole was only about two inches deep.

150. **Barbatula leucolæma.** Not common.

151. **Dendropicus pœcilolæmus.** The only Woodpecker noticed in this locality. Fairly common. Birds in breeding condition were obtained in March and May.

152. **Vinago calva.** This bird quite realises its extraordinary protective colouring, and acts up to it by remaining absolutely still in a tree when danger threatens, and is then almost impossible to see from below. It builds in May and again in September, usually in quite a conspicuous position.

When sitting this bird seems quite fearless, and on one occasion I sent a boy up to a nest on which the bird was sitting. It did not fly off till he was almost within reaching distance, and then only to a neighbouring tree, whence it returned several times, circling round close to us. As soon as we left it came back.

153. **Columba unicincta.** This fine bird is common in the depths of the forest, and its deep "coo" can be frequently heard. Its mating "coo" is very soft and hardly audible a short distance away. A pair was seen together in February and on a previous occasion in March. I can find out nothing yet about its nesting-habits.

154. **Turtur semitorquatus.** Very common. They breed from March to June.

155. **Chalcopelia afra.** Common around the outskirts of forest. A bird with a considerable amount of white on the primaries was obtained. The nesting-season is from May to July.

156. **Tympanistria tympanistria.** Not uncommon in the forests. Nests in March.

157. **Psittacus erithacus.** Seen daily flying high overhead, but seldom settled.

158. **Agapornis pullaria.** The shrill notes of this bird are frequently heard as it darts about, its flights being very rapid. I never remember seeing a single specimen, two or more being always together.

159. **Scops scops.** A specimen of this bird was brought to me on March 20. It was very fat.

160. **Bubo lacteus.** Heard and seen a few times in the forest.

161. **Milvus ægyptius.** Abundant and, though useful as a scavenger, has to be shot where young chickens are about. On one occasion I found the gizzard of one of these birds full of hairy caterpillars.

162. **Aquila wahlbergi.** Fairly common. A great enemy to the chickens.

163. **Accipiter melanoleucus.** A fine male was shot in December, after having tried to carry off a chicken almost as heavy as itself.

164. **Scopus umbretta.** Often to be seen in or near running water.

165. **Corethrura pulchra.** Probably common in most of the swamps, but difficult to obtain, owing to their only flying a few yards before dropping into the long grass and not rising again. When put up by dogs in swampy forest, which they are also partial to, they often fly into trees, and can then be shot. I watched one for several minutes on one occasion in a swampy patch of forest running about and bobbing its tail in the regular Rail-fashion, all the while uttering a chirpy call.

166. **Turnix nana.** Occasionally seen, but never common. One hears frequently a curious booming call, which all the natives say is a puff-adder, but which, I think, may be this bird.

167. **Excalfactoria adansoni.** Now and then one comes across small parties of this pretty little Quail, usually in old deserted gardens. They can often be flushed by a dog a second time, unless the grass is too thick for the dog to move quickly.

168. **Francolinus schuetti.** The only common Francolin in this district. It is invariably met with in pairs. It usually perches after being flushed by dogs, and can then be approached to within a few yards, and will often not fly until stones have been thrown, and then only if almost hit.

169. **Francolinus mulemæ.**

Francolinus mulemæ O.-Grant, Bull. B. O. C. xiv. 1903, p. 30.

Very occasionally met with.

170. **Numida ptilorhyncha.** By no means abundant. A nest was found at the end of June with seven eggs just hatching. These were put under a hen and five hatched out. Spotted feathers on the breast began to appear when they were six weeks old.

171. **Otis melanogaster.** Not common, occasionally seen in the short grass. An egg figured (Plate X. fig. 15) was obtained near Mubende in April, the bird being flushed off its nest.

172. **Balearica pavonina.** Usually a few to be seen on cultivated ground.

173. **Phyllopezus africanus.** Very common on the water-lilies in the calm water around the lake-edge. A clutch of four eggs (Plate X. fig. 9) was taken on the lake-shore by natives at the end of August.

174. **Totanus ochropus.** Now and then seen in February and March.

EXPLANATION OF PLATE X.

Uganda eggs, with the dates in which they were taken.

Fig. 1. *Camaroptera tincta.* 9.6.12.
2, 3. *Anthothreptes hypodila.* 20.5.12.
4. *Chalcomitra acik.* 7.5.11.
5. *Chrysomitris frontalis.* 31.5.12.
6. *Melanopteryx nigerrima.* 17.4.12.
7. *Cisticola sylvia* 23.4.12.
8. *Pyrenestes ostrinus.* 5.4.12.
9. *Phyllopezus africanus.* 22.8.11
10. *Chalcomitra acik.* 21.6.12.
11 *Campophaga phœnicea.* 31.3.12.
12. *Cisticola sylvia.* 16.9.11.
13. *Platystira cyanea.* 25.4.11.
14. *Terpsiphone emini.* 16.6.12.
15. *Otis melanogaster.* 15.4.08.
16. *Xanthophilus xanthops.* 24.4.11.
17. *Elminia longicauda.* 16.4.12.
18. *Burnesia reichenowi.* 13.6.12.
19. *Bleda pallidigula.* 16.4.11.

XXVIII.—*A Visit to Babel Island, the Nesting-place of* Puffinus tenuirostris brevicaudus *Gould*. By C. F. Cole.

[The following account of the Mutton Bird rookery by Mr. C. F. Cole has been communicated by Mr. G. M. Mathews, M.B.O.U.]

Last year, on November 23, with eleven other members of the Royal Australasian Ornithologists' Union, I visited Babel Island. Probably the largest Mutton Bird rookery in the Southern Hemisphere is upon this island. It is one of the Furneau group, lying some two and a half miles off the east coast of Flinders Island, situated in the Bass Strait between the mainland of Australia and Tasmania. These islands are under the control of the Tasmanian Government.

During the birding-season 1912, I am told that some 500,000 birds were killed, cured, and exported from this island, principally by the half-cast aboriginal population inhabiting Barren Island and adjacent islands in the Strait. The site selected by these birds for nesting purposes is a peak rising some hundreds of feet above sea-level. The larger portion of the rookery faces the west and south-west. The nature of the soil upon this island is chiefly a loose gritty sand, easily scratched out by the birds. The rookery is covered, particularly in the higher portions, with a tough tussocky grass common to the islands of Bass Strait.

On the west and south-west sides, where the ground starts to slope upwards, the rookery begins towards the base, extending right to the top and around the peak, the ground being honeycombed with countless breeding burrows. After an early tea, and everything being made snug for our night's stay, the lower portion of the rookery was visited and numerous burrows examined; the result being that many contained fresh eggs, no doubt deposited during the previous night.

Having collected sufficient eggs for breakfast, and the sun having dipped below the horizon, the attention of members present was turned towards the first incoming birds, which began to make their appearance at dusk. The birds, circling high over that part of the rookery where their chosen burrow was situated, gradually reduced their height, and, skimming over and around the rookery, uttering their short purring notes, suddenly alighted close to the opening of the burrow, which they immediately entered.

If interfered with, or if an attempt was made with the hands to prevent them entering, they would inflict nasty skin-wounds with the sharp curved unguicorn at the tip of the upper mandible.

Temporary darkness setting in before the rising of the moon, the swish of wings, the purring notes, the flapping of wings upon the ground, and the scrambling of the birds to enter the burrows were the predominating sounds. The moon eventually made its appearance above the crest of the rookery peak and exposed to view thousands of these birds, which, as they kept crossing and recrossing the moon's disc, made an impressive sight.

Although the eve of November 24 is the usual date for the great incoming flight of these birds to deposit their eggs, thousands must have been laid in the burrows of the Babel Island rookery during the night of November 23.

Securing and examining many of the birds before they entered the burrows, I found them to be in every case the female bird, each carrying the egg well down in the oviduct. Inserting the tip of one of my fingers slightly into the cloaca I could distinctly feel the hard shell of the egg. Returning to camp with four female birds, each carrying an egg well down in the oviduct, I placed them in a deep barrel used by the bird-hunters for salting purposes, the depth of the barrel preventing their escape. Being awakened next morning at daybreak by the cry of numerous Mutton Birds, I hastily arose, to find thousands of them departing from the rookery.

On visiting the rookery after breakfast I found that a large percentage of the burrows examined contained an egg, and each was occupied by a male bird. Mentioning this fact later on to our boatman, an old birding-hand and an intelligent half-caste aboriginal, by name Thomas, he informed me that the female comes in during the early part of the night to deposit her egg, and that the male bird, coming in later and towards daylight, takes the place of the female upon the egg during the day, and that the outward flight of birds witnessed on the morning of November 24 were females leaving the rookery, having deposited their eggs the night previous.

This bears out my own observations. He, Thomas, also informed me that the male bird did not sit upon the egg during the daytime when incubation started.

Having dissected at different times birds taken from the burrows between the latter end of November and the first week in the new year, I found all birds to be females, again bearing out Thomas's observations.

Upon asking him whether the female bird sat right through during the period of incubation, or if the male bird relieved her during the night, he could not say, but felt certain that the male bird came in during the night and fed the female.

Asking Thomas how he knew the male from the female bird, he quickly drew forth a bird from its burrow, turned the bird over, and at once diagnosed the bird as a male. The morning following the depositing of an egg overnight, if the bird is a female, the cloaca or entrance to the oviduct is swollen and moist. If the bird is a male the vent is dry and normal. If a female and carrying the egg in the oviduct the sex can be detected by feeling with the fingers. By dissection I proved him to be correct.

Upon returning to camp I examined the female birds placed in the barrel overnight, expecting to find the egg deposited, but the result was negative—the egg still being in the same position in the oviduct. But the cloaca was not so swollen as when examined the evening previous.

In our hurry to get away from the island owing to heavy weather approaching, these birds were forgotten and left in the barrel. But I am thankful to say that they were not left to starve, several other members of the R. A. O. U.

visited the island and liberated them on Monday afternoon, November 25.

The member who liberated them stated that no eggs had been deposited in the barrel. There is no doubt whatever that these four birds would have deposited their eggs during the evening of the 23rd if they had not been placed in captivity. I think there is sufficient evidence to show that if unfavourable conditions are brought about this bird has the power to withhold the depositing of an egg upon or about a certain date.

Whether the four birds confined had the physical power of controlling those functions responsible for the expulsion of the egg from the oviduct, or such functions became semi-paralysed for the time through fear combined with being confined in an unsuitable place, is known only to the captives themselves.

No doubt after incubation starts the male returns each night to the burrow and feeds the female bird, and she leaves the burrow for exercising purposes, the male taking her place upon the egg in her absence. I have dissected in my time about 100 birds, taken from the burrows during the daytime, all birds being females—*i. e.* after incubation started.

Indications point to the fact that after the egg is deposited the male bird takes the place of the female in the burrow during the day following, purely to protect the egg before the female bird starts to sit in earnest to incubate the egg.

This practice is common with many male birds of the same nesting habits, particularly those that deposit more than the one egg. The male bird simply stands over the egg in the nest until the last egg has been deposited. When the female starts incubation in earnest, in some cases the male protects the nest and egg by remaining close by and attacking any intruders. With Cuckoos they simply take possession of the nest until the egg is deposited or placed therein. After careful observations for years I have noticed this. The male bird takes his share of incubation in many instances, but not to generate heat, simply to retain the same while the female is away from the nest feeding or exercising.

XXIX.—*Corrections to the 'Catalogue of the Collection of Birds' Eggs in the British Museum.'* By the Rev. F. C. R. Jourdain, M.A., M.B.O.U.

The first of the five volumes which comprise the 'Catalogue of Eggs' was issued in 1901, and the fifth at the close of the year 1912. During that period, with the exception of one or two typographical corrections, no list of errata has been published. The present contribution applies only to the Palæarctic eggs, and is not intended to be exhaustive, as many of them have not yet been critically examined by me; but it is hoped that it may prove useful to oologists.

Although the British Museum collection is by far the largest in the world as regards the number of *specimens*, it is much inferior to that of Herr Nehrkorn in species. In the volumes before us 3890 species are recorded and 69,828 specimens; but the Nehrkorn collection contains no fewer than 5440 species and subspecies, leaving a balance in favour of the private collector of no fewer than 1550 species! Considering the widespread interest which exists in England in the study of oology, is it too much to hope that, with a little encouragement from the authorities of the British Museum, our National collection might be raised to the same level as that which has already been attained by a single private collector?

The 'Catalogue' would, of course, have been infinitely more valuable if it had contained references to those species which are not represented in the collection as well as those of which the Museum has specimens; but this would have entailed a very great increase in the bulk and cost of the work, and was perhaps impracticable. There are, however, other defects in the plan of the work which could easily have been avoided. Thus, with a few exceptions (chiefly confined to the earlier volumes of the series), there is no indication of the number of eggs in the clutch, and whether any single item in the list refers to a number of eggs gathered together from various sources on a given day or forms a perfect clutch. In one species no fewer than a dozen complete sets are catalogued, but they are not distinguished in any way from other "odd lots" of eggs, although the addition of the letter (c.) in small type to the number of eggs would have conveyed this information. The measurements also as given in this work are almost useless, and it would have been far better to measure accurately a stated number of specimens and give the average thus obtained together with the maxima and minima. For such purposes, the metric system is much better adapted than that of fractions of the inch, and enables comparison to be made at once with the Continental literature of the subject.

In many cases (especially in the earlier volumes) the eggs of allied forms are grouped together under one head, but, as these can in most cases be separated by the localities given, it has not been thought necessary to further indicate them, and the present paper is chiefly devoted to erroneous identifications and mis-statements. Purely nomenclatural questions do not come within the scope of this article.

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P. 33. Under the heading *Caccabis chukar* (J. E. Gray) are placed five clutches of Partridges' eggs taken by Krüper, Seebohm, and W. H. Simpson on the Greek mainland near Athens, Delphi, and Tzipiana. Here *C. chukar* does not exist, but is replaced by the form of *C. saxatilis* which inhabits the southern part of the Balkan peninsula (*C. saxatilis græca*). This error was pointed out by Herr Otmar Reiser in 1905 in his 'Materialien zu einer Ornis Balcanica,' iii. p. 408. Curiously enough, the distinctions between the eggs of these two species are described and commented on; but their significance seems to have been altogether overlooked by the writer of the 'Catalogue.'

P. 71. *Turnix sylvatica* (Desf.). The eggs obtained from Favier by Seebohm were laid in confinement at Tangier.

P. 80. The statement that "the eggs of all Pigeons are white when first laid and that discoloration takes place after incubation has commenced" is not borne out by facts. Perfectly fresh eggs of *Œna capensis* are a brownish cream-colour.

P. 141. The egg of *Colymbus pacificus* is figured on pl. xi. fig. 6, and not fig. 5 as stated (see also pp. 149 and 250).

P. 147. *Procellaria pelagica* L. Four eggs from the Blasket Isles are said to have been taken on *April* 26. Mr. W. H. Turle, who took the eggs in question, writes in the 'Ibis,' 1891, p. 11, that he obtained a good many eggs on Irishnabro in the Blasket group in *the last week of May.* No Storm-Petrel has eggs as early as April in the British Isles. The eggs are marked in pencil 4/26/89, but Turle's set-marks are rarely intelligible.

P. 186. *Sterna dougalli* Mont. Three eggs ascribed to this species from Glashedy, Ireland (H. Saunders), and probably all, or nearly all, the eggs of American origin in the Museum, are not those of the Roseate Tern at all. Two eggs from the Crowley bequest are also very dubious. Those from Wales and the Farnes are, however, genuine. The statement that "the eggs of the Roseate Tern resemble those of the Common and Arctic Terns and pass through the same variations of shape and colour" is quite erroneous, and is founded on unreliable material.

P. 187. *S. cantiaca* Gm. Six eggs from Lake Sinöe are said to have been taken on May 9, but Seebohm's visit to that locality was paid on 9 June, 1883, and the eggs are marked with that date.

P. 220. *Larus glaucus* Fab. Under this heading is catalogued a series of erythristic eggs of the Herring-Gull, *L. argentatus,* taken at Vardö by Nordvi (from the Seebohm collection). They were ascribed to *L. glaucus* by Seebohm and figured by him as such, but it has been clearly shown by the late H. J. Pearson and others that the species which produces these red eggs in Norway is *L. argentatus*, and that *L. glaucus* does not breed there at all. Another red egg (not yet catalogued) is marked "*L. argentatus*," to which a (?) has been added, but it is included among the eggs of *L. glaucus.* The statement on p. 220 that the erythristic type is "quite unique among Gulls' eggs" is also incorrect, as similar eggs have been recorded from *L. ridibundus,* both in Scotland and Germany, and also from *L. marinus.* Other eggs in the collection from Vardö are really those of *L. marinus.*

P. 225. *Megalestris catarrhactes* (L.). Three eggs from the Seebohm collection are stated to have been taken by W. Dunn on the Orkney Islands. There is, however, no reason to believe that this species has ever bred there.

P. 227. *Stercorarius crepidatus* (Banks). An egg from Lundegode, Finmark, is said to have been taken on Oct. 7! It is, however, marked 7.10.57, which surely means July 10, 1857.

Vol. II. (1902).

P. 20. *Ochthodromus geoffroyi* (Wagl.). The eggs figured and described as of this species are those of *Rostratula capensis* (see the 'Ibis,' 1905, p. 61). This also applies to the eggs mentioned on p. 347.

[P. 77. *Glareola pratincola* (L.). It is questionable whether the eggs obtained by Mr. S. Doig at the Eastern Narra, Sind, belong to this form. More probably they should be catalogued under *G. orientalis.*]

P. 111. *Pyrrherodias purpurea* (L.). The eggs obtained by Mr. W. D. Cumming were not taken at Fao as stated, but at Koweit, on the Persian Gulf, and are so marked by the collector *.

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* Mr. C. B. Rickett has also pointed out ('Ibis,' 1905, p. 65) that the two oviduct eggs, catalogued as *Demiegretta sacra,* should be entered under the heading of *Herodias eulophotes* Swinh.

P. 138. *Cygnus cygnus* (L.). Two eggs from the Seebohm collection, stated in the 'Catalogue' to come from "Europe," are marked North Iceland.

P. 148. *Anser anser* (L.). With regard to the two eggs catalogued from "S.W. Spain (L. H. Irby)," it is stated in a footnote that Colonel Irby makes no mention of these eggs in the 2nd edit. of his 'Ornithology of the Straits of Gibraltar.' The writer has evidently overlooked Colonel Irby's paper in the 'Ibis' for 1879, pp. 345–6, where it is stated that two Geese were seen on the Laguna de la Janda in May 1876, and that seven or eight eggs were brought into Gibraltar later from the same place. "There is little doubt that the birds had been slightly wounded and [were] unable to migrate."

P. 149. *A. erythropus* (L.). The egg from Finland (Tristram coll.) is too large for this species, and, if the locality given is genuine, is probably an egg of *A. fabalis*.

P. 149. *A. fabalis* (Lath.). Four eggs from Iceland (three from the Seebohm collection and one from the Crowley bequest) are erroneously ascribed to this species, which has never been known to breed in Iceland. It has been customary for Icelandic collectors to apply the name "*A. segetum*" to the common Gray Goose of the country, which is the Grey-lag, *A. anser*, and probably the eggs in question belong to this species, but *A. albifrons* and apparently *A. brachyrhynchus* also breed in Iceland.

P. 161. *Casarca casarca* (L.). Two single eggs, separately catalogued, from the Salvin and Tristram collections, are part of a clutch of four eggs taken near Ain Djendeli (see 'Ibis,' 1859, p. 362; Ooth. Wolleyana, ii. p. 530).

P. 178. *Marmaronetta angustirostris* (Ménétr.). "Runilla," near Seville, which is given as a locality for this species, is really the Spanish name for this Duck, which has been written by Ruiz on the eggs.

P. 179. *Netta rufina* (Pall.). Three eggs from Zana (Tristram and Salvin collections), separately catalogued, form part of a single clutch of seven eggs (see Ooth. Wolleyana, ii. p. 582).

P. 189. *Heniconetta stelleri* (Pall.). There is no satisfactory evidence of the breeding of this species in Norway, and the specimens recorded should be marked with a query.

P. 192. *Erionetta spectabilis* (L.). Six eggs from the Crowley bequest (S.W. Greenland) are of very doubtful authenticity, and differ considerably from genuine eggs of this species. They should be marked with a query.

P. 201. *Phalacrocorax desmaresti* Payr. An egg from the Tristram collection is stated to come from the "River Volga." This locality must be erroneous, as Shags are exclusively marine breeders, and, according to Nordmann, rarely visit the Black Sea, while east of the Caucasus they are unknown.

P. 224. *Vultur monachus* (L.). The egg from Magdala (Tristram collection) was obtained from a nest among rocks in February (see 'Ibis,' 1865, p. 245). The bird was flushed from the nest, but not obtained, while the egg is to all appearance that of the Griffon Vulture, and the nature of the site and date of nesting confirm this view. Probably the bird was an unusually dark Griffon. (Some doubt is also attached to the egg from El Kantara, obtained from Loche, which was apparently marked "*auricularis*" and subsequently altered to "*cinereus.*") Tristram states that a colony of *Otogyps nubicus* exists near El Kantara ('Ibis,' 1859, p. 282). No specimens of either species were obtained by him in Algeria.

P. 235. *Circus cyaneus* (L.). The eggs catalogued under this head from Blackwater, Dorset, are marked "*C. pygargus*" by the finder, and are much more likely to belong to the latter species.

P. 238. *C. pygargus* (L.). The three eggs from Ventnor, taken on May 30 and July 2, 1875, formed part of one clutch of four eggs, though here separately catalogued (see 'Zoologist,' 1875, pp. 4654, 4658). Five eggs from near Berlin, taken by Dr. Holland and marked by him "*cyaneus*," are here catalogued under "*pygargus*."

P. 239. *C. macrurus* (S. G. Gmel.). Apparently the eggs ascribed to this species from the Seebohm collection are so designated solely because they are spotted and blotched with brownish markings, though the series includes specimens marked by the collectors as *cyaneus* and *pygargus*. In the case of birds like the Harriers, whose eggs so nearly resemble one another, this proceeding is quite unjustifiable.

P. 239. *C. æruginosus* (L.). The locality "near Oxford, July," given with an egg presented by Mr. H. K. Swann, has been known to be unreliable for nearly twenty years. The statement was withdrawn in the 'Zoologist,' 1894, pp. 268, 304, etc., but still remains uncorrected in the 'Catalogue.'

P. 254. *Buteo desertorum* (Daud.). Under this head are grouped the eggs of two distinct species: three clutches of the eastern form of the Common Buzzard, *B. buteo desertorum*, and eggs from three sources of the North African race of the Long-legged Buzzard, *B. ferox cirtensis* Lev.

P. 264. *Aquila heliaca* Sar. The egg from Mt. Edough, nr. Bône, Algeria, may possibly be that of *A. rapax belisarius*, which undoubtedly breeds there. The evidence of the breeding of *A. heliaca* and *A. adalberti* in N. Africa is very unsatisfactory.

P. 268. *Aquila maculata* Gm. The series of eggs catalogued under this heading is in some confusion, and obviously includes eggs of both species of Spotted Eagle. Thus a clutch of two eggs from Parnassus, taken 23 April, 1875, by Krüper, and marked by him "*A. nævia*," is evidently the Lesser Spotted Eagle. The eggs from Tunisia should also be queried in the absence of any proof as to which form breeds there.

P. 270. *Eutolmaëtus fasciatus* Blyth. The egg from Gilead, May 2 (Tristram coll.), is that of *Circaëtus gallicus,* and the maximum measurements given must be modified accordingly.

P. 299. *Falco barbarus* L. The two eggs from Djebel Dekma, taken 8 April, 1857, and separately catalogued, form part of a single clutch of three eggs (see 'Ibis,' 1859, p. 187).

P. 299. *F. feldeggi* Schl. Two eggs from Russia (Crowley bequest) and two sets from the R. Volga (Seebohm coll.) are erroneously ascribed to this species, and should have been catalogued under *F. cherrug.* This error has been pointed out by Herr O. Reiser ('Ornis Balcanica,' iii. p. 351).

P. 336. *Athene glaux* (Sav.). The extraordinarily large egg from the old collection and without data is almost certainly that of *Strix flammea.*

P. 353 (Appendix). *Limosa limosa* (L.). Under this heading is catalogued a supposed egg of this species from the Orkneys (Tristram coll.) ! It is almost needless to say that no species of Godwit has ever been found breeding in the Orkneys, and an examination of the egg in question shows it to be a lightly marked and prematurely laid Lapwing's egg.

Two eggs from Bodö, Norway (Tristram coll.) are also catalogued here, although only the Bar-tailed species breeds there. A reference to Tristram's 'Catalogue of Birds' shows that the bird shot by him at Bodö was, as might be expected, *L. lapponica.*

P. 373. *Plegadis falcinellus* (L.). It is not credible that the eggs of this species were taken at Sarepta in South Russia in *December* as stated.

[Misprints of less importance also occur in this volume: 'Lucas' for 'Lucar' (p. 43, line 5 from below) ; 'Swake' for 'Snake' (p. 46, l. 8 from above) ; 'Ringley' for 'Singley' (p. 283, l. 18 and 19 from below. 'Myvatn' is usually written as two words, and the name of the Icelandic collector Nielsen is written 'Nielson' throughout.]

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P. 51. *Merops persicus* Pall. Measurements omitted. This is also the case on p. 303.

P. 66. *Caprimulgus ægyptius* Licht. See Mr. H. E. Dresser's remarks on these eggs (with which I am quite in agreement) in his 'Eggs of the Birds of Europe,' p. 449.

P. 142. *Gecinus vaillanti* (Malh.). Three eggs from Kef Laks collected by Tristram and Salvin, and separately catalogued, formed part of a single clutch of seven eggs (see 'Ibis,' 1859, p. 315; Ooth. Wolleyana, i. p. 187).

P. 143. *G. canus* (Gm.). Two eggs catalogued as from "Russia" are marked "Krain" (*i. e.*, Carniola in Lower Austria).

[Among less important misprints may be noted: 'Dart' for 'Dort' (p. 47, l. 6 from above); 'Ruckheil' for 'Ruckbeil' (p. 78, l. 3 from above); fig. 17 for fig. 18 (p. 228).]

Vol. IV. (1905).

P. 63. *Panurus biarmicus* (L.). "Hornsea, Norfolk" is apparently a mistake for Horsey, Norfolk. Hornsea Mere (where this species has recently been introduced) is in Yorkshire, but there is no reason to think that the eggs were taken there.

P. 112. *Cichloselys sibiricus* (Pall.). See Hartert, Vögel pal. Fauna, i. p. 645, where it is stated that there is no ground for the statement that this species breeds on the Koko-nor. The skins collected at this locality with the eggs were sent to the Tring Museum, from whence some of the eggs passed into Mr. Crowley's possession.

P. 144. *Cyanecula cyanecula* (Wolf). The five eggs from Belgium (Salvin-Godman coll.) were not taken (as stated) by C. B. Wharton and H. Seebohm, but by J. Baker in 1856, twenty years before Seebohm's visit.

For "May 10th" in the fourth entry under this head read "May 18th."

P. 146. *Aedon luscinia* (L.). The egg from Parnassus, taken by Seebohm and Krüper is not that of this species, but the Common Nightingale, *A. megarhyncha.* The Northern Nightingale does not breed in Greece.

P. 167 and 171. *Saxicola stapazina* (L.) and *S. melanoleuca* (Güld.). These two supposed species are now known to be merely dimorphisms, and should be united. This also applies to the Western race (*S. caterinæ* and *S. occidentalis*).

P. 170. *Saxicola lugens* Licht. The eggs figured and described under this title appear to be all erroneously identified. All the eggs collected and carefully identified by Koenig, Rothschild, Hartert, and myself in Algeria are of quite a different type, having a pale bluish or bluish-white ground, like the eggs of *S. leucura.* No reference is given to the excellent figures of a genuine clutch in the Journ. f. Ornith. 1896, tab. vii. fig. 4, which differ widely from that given on plate vii. fig. 6 of the 'Catalogue.'

P. 179. *Locustella luscinioides* (Savi). For "5 Hungary, 6th June" read "5 (clutch) Velencze, Hungary, 16th May (F. A. Cerva)."

P. 180. *Acrocephalus aquaticus* (Temm.). For "Anklam, 5th June" read "Mark Brandenburg, 30th May."

P. 185. *A. streperus* (Vieill.). Among the eggs collected by Tristram and Salvin in Algeria were some which were ascribed by them to *A. aquaticus.* The writer of the 'Catalogue' in my opinion quite rightly recorded them under the title of *A. streperus,* to which the three eggs from Zana undoubtedly belong and probably the others also. The original finders' identification should, however, have been recorded in brackets. On examining these eggs in July 1913 I find they have been transferred to *A. aquaticus.*

P. 212. *Sylvia orpheus* Temm. In the description of the eggs of this species the writer has overlooked the fact that eggs of the Eastern race (*crassirostris*) from the Balkan Peninsula, Asia Minor, Palestine, etc., differ considerably in appearance from those of the Western race, and can generally be distinguished at a glance.

P. 211. *S. mystacea* Ménétr. The first two citations in the synonymy given do not apply to this species, but refer to Bowman's Warbler. On p. 215 for "Bowman's Warbler" read "Ménétries' Warbler."

P. 294. *Pomatorhynchus tschagra* (Vieill.). The eggs figured (pl. xiii. f. 10) and described under this name are not those of the Hooded Shrike or any species of the genus *Pomatorhynchus*, but obviously are those of a species of *Lanius*. That taken by Tristram is the egg of *L. algeriensis*. The statement in the footnote is also erroneous, as Bree's figure represents the egg of this species correctly. This error has already been pointed out by H. E. Dresser in his 'Eggs of the Birds of Europe,' p. 295.

P. 304. *Lophophanes cristatus* (L.). Under this name are catalogued four eggs from Gibraltar taken by Colonel Irby (from the Seebohm collection). Although Irby marked these eggs in ink as "Creeper" quite correctly, his identification has been ignored, and the eggs catalogued as Crested Tits, though any confusion between the nests of the two species would be impossible to a field-naturalist. They are really the eggs of the Spanish race of the Short-toed Creeper, *C. brachydactyla ultramontana*, and agree perfectly with other eggs of this species in my collection from the same locality.

In the first entry under this heading delete "Ross-shire" and substitute "Probably Spey Valley" (see 'A Fauna of the Moray Basin,' i. p. 256).

P. 326. *Certhia familiaris* L. At least one entry under this title, that from "S. Spain (H. Saunders)," does not belong to this species, but to *C. brachydactyla*.

[Among minor misprints in this volume, for Dr. H. 'Collart' read 'Coltart' (p. 40, l. 20 from below); for 'p. 177' read 'p. 117' (p. 45, l. 2 from below); for 'tab. 74' read 'tab. 75' (p. 126, l. 28 from below; *Larvivora brunnea* (no. of eggs not stated) p. 150, also on p. 293; for 'Phyllopnenste' read 'Phyllopneuste' (p. 219, l. 17 from below); for 'p. 28' read 'p. 40' (p. 306, l. 27 from below); for 'p. 306 (1899)' read 'p. 196 (1889)' (p. 323, l. 5 from above).]

Vol. V. (1912).

P. 82. *Motacilla melanope* Pall. The statement that erythristic colouring is not observable in eggs of the Western form of Grey Wagtail may be true of the Museum series, but is incorrect as a general statement, as erythristic eggs have been recorded of the Western form both from England and the Continent.

P. 85. *M. flava* L. It is incorrect to state that eggs of the Blue-headed Wagtail are indistinguishable from those of *M. boarula*. Possibly in rare cases the distinctions are not very apparent, but, as a rule, the eggs are readily distinguishable. Three clutches of eggs from S. Spain and four from Algeria are included in error under this heading, and should have been catalogued under *M. cinereocapilla*. Breeding birds shot from the nest in Algeria by Mr. F. R. Ratcliff and in S. Spain by Mr. W. M. Congreve had all the characters of the latter race. It should be noted that Colonel Irby (Ornith. of the Straits of Gibraltar, 2nd edit. p. 114) distinctly states that *M. cinereocapilla* was nesting near Casas Viejas (where one of the clutches in question was obtained) in May.

P. 87. *M. cinereicapilla* (sic). Two sets of eggs from Tunisia are rightly included here, but the same can scarcely be said of the eggs from the Kirghiz Steppes and Lenkoran, both of which localities lie far outside the breeding-range of this race.

P. 95. *Anthus striolatus* Blyth. The figure (pl. v. fig. 15) and description are taken from two eggs from the Nilghiri Hills, presumably taken by Miss Cockburn, and which formed part of the Hume collection. Hume and Oates, however, ignored them in the 'Nests and Eggs of Indian Birds.' No nest of this species has ever been recorded from southern India, but it has been found breeding at about 6000 ft. in Assam by Mr. E. C. Stuart-Baker. It is unfortunate that an egg with so dubious a pedigree should have been selected for illustration.

P. 114. *Rhamphocorys clot-bey* (Bp.). Here again the figure (pl. vi. fig. 16) and description are taken from a clutch of eggs purchased by Mr. Radcliffe Saunders from a dealer, and purporting to have been taken by P. Spatz in Algeria. I am informed by Mr. Rothschild and Dr. Hartert that Herr Spatz never visited Algeria before 1912, and that the only eggs of this species which have been obtained are the two taken by Koenig in 1893, a clutch of two or three eggs taken by Spatz and sold by him to Koenig, and those in the Tring Museum taken in 1913. These all agree in being marked with reddish on a white ground, and bear no resemblance whatever to the egg here figured, which is evidently that of some form of Crested Lark.

P. 123. *Melanocorypha sibirica* Gm. Kazan is not in E. Roumelia as stated, but in E. Russia. Moreover, the White-winged Lark does not breed in the Balkan Peninsula.

P. 130. *Calandrella brachydactyla* (Leisl.). Two eggs, without data, from the Crowley bequest are said to come from [Germany]! It is only known in Germany as a rare straggler to Heligoland, and recorded from near Mainz.

P. 139–140. No reliance can be placed on the authenticity of the Crested Larks' eggs from Spain and North Africa as *G. theklæ* breeds in the same districts, and the birds were not distinguished by the collectors. Nearly all the eggs catalogued under the heading *Galerida macrorhyncha* Tristr. were obtained on the high ground near Ain Djendeli, where *G. cristata macrorhyncha* does not exist, and *G. theklæ* is the commoner species. Unfortunately, three of these eggs have been figured.

[P. 193. *Linaria hornemanni* (Holb.). It is very questionable whether eggs of the Icelandic Redpoll should be assigned to this species. Hantzsch described the Iceland bird as a distinct race, but it is barely distinguishable, if at all, from *Linaria linaria* (L.).]

P. 219. *Carpodacus erythrinus* (Pall.). Four eggs are said to have been taken at Sayn, Rhenish Prov., S. Germany! The only district of Germany in which this species breeds is in the north of East Prussia, though it is said to have formerly nested in Silesia. There is no evidence of its ever having bred in western Germany, and Le Roi states that it has not been recorded from the Rhine Province.

P. 257. *Calcarius lapponicus* (L.). The eggs from Iceland (W. Proctor) were probably bought by him during his visit, as this species has never been known to breed there.

P. 466. *Corvus cornix* L. A clutch of three eggs assigned to this species, together with an egg of *Coccystes glandarius*, are said to have been taken in South Spain (Radcliffe Saunders coll.). As the Hooded Crow is a rare vagrant during the winter months only to Spain, it is incredible that the eggs should be those of this species. Mr. Ogilvie-Grant has suggested that the nest may have been taken in the Balearic Isles (which can hardly be described as "South Spain"), but unfortunately for this supposition there is no evidence that either the Hooded Crow or the Great Spotted Cuckoo has ever occurred on these islands. The statement that the Hooded Crow was found breeding there by Von Homeyer is based on error. The eggs may possibly be those of *C. corone*, which breeds rather sparingly in southern Spain. No collector's name is given, and the eggs were obtained through a German dealer.

[P. 491. Of three clutches of eggs of Jay from the same locality (Lenkoran, Talish), two are assigned to

Garrulus caspius and the third to *G. krynicki*. The last should be queried (?), as the lowlands of the Talysch are the home of *G. caspius*.]

[Among the less important misprints are the following: on p. 403, l. 5 from below, for 'Lemback' read 'Lembach'; p. 424, l. 12 from above, for 'Waschbunk' read 'Waschbank'; p. 428, l. 29 from below, for 'Cerwa' read 'Cerva'; p. 473, l. 2 from below, for 'Anderach' read 'Andernach'; p. 490, l. 11 from above, for 'Eleubf' read 'Elbeuf.']

XXX.—*Notes and Observations on the Painted Snipe* (Rostratula capensis) *in Ceylon*. By J. O. Beven, B.A. (Christ's College, Cambridge).

The genus *Rostratula*, consisting of only three species, has a wide distribution in the world, and has attracted some attention, owing to the fact that its members afford an example of a typical sexual dimorphism, the females of all three species being more conspicuous than their mates, both as regards size and plumage.

Common though this "superiority" of the female is among the Insects and some other Invertebrate groups, it is extremely rare among Birds, and Darwin, in the 'Descent of Man,' quotes the Painted Snipe as an example of it.

The females of the genus *Turnix*, of two species of Phalarope (*P. hyperboreus* and *P. fulicarius*), of the Cassowary (*Casuarius*), and of one or two other birds, excel their mates as regards size, but in none of them is the difference between the sexes so marked as it is in *Rostratula*, where, in addition, the females are very much more brightly coloured and also possess a more complicated arrangement of the trachea than do the males.

There are three known species of *Rostratula*: *R. australis*, inhabiting the Australian region; *R. semicollaris*, found in Patagonia, Chili, and other parts of South America; and *R. capensis*, the only one which I have had the opportunity of observing, and some of the habits and peculiarities of which I have studied.

Like its allies of Australia and South America *Rostratula capensis* is known as the Painted Snipe or, more popularly, the "Painter." It has a wide distribution, being recorded from Africa through southern Asia to Japan, China, the Malay Archipelago and Peninsula, from India, and, lastly, from Ceylon, where alone I have made observations on the bird.

In Ceylon it is the only Snipe which is a resident throughout the year, though it is credited by some with being a migrant as well. Certain it is that the bird is more commonly met with at certain seasons than at others, being most numerous from September to April, when it is found in the paddy-fields and marshy districts of the low country generally. But the reason for this apparent increase in numbers is not far to seek. The "months with an R"—September to April—constitute the "Snipe Season," when thousands of the Pin-tailed Snipe, *Gallinago stenura*, are found in the paddy-fields and about the great irrigation-tanks of the low country, and sportsmen brave mosquitos, malaria, and all other ills to shoot them.

During the rest of the year *Gallinago stenura* deserts Ceylon, and sportsmen, leaving the paddy-fields with their attendant discomforts alone, turn their attention to other game. Consequently, the "Painter," which does not change its habitat, is but seldom seen, and so the idea has become prevalent that it is a migrant, like its Pin-tailed ally.

Rostratula is very local in its distribution, and does not occur at elevations above a thousand feet. It is most frequently met with in the Southern and Western Provinces of the island and in the salt-marshes round Trincomalee in the east, though it has been recorded at various times from all parts of the low country. I have shot over large tracts of Snipe-ground in the North Western Province and have never seen a Painted Snipe, and in the extreme north, in the course of four months' almost daily shooting among the dense mangrove-swamps which fringe the brackish tanks found there, I came across only half a dozen specimens. In the Western Province, about 25 miles north of Colombo, I have found the bird more numerous, both relatively and absolutely, than anywhere else.

Hume and Marshall state that one *Rostratula* to every fifty Pin-tailed Snipe gives a fair idea of the frequency with which the "Painter" figures in the sportsman's bag; but in the above district I shot, in 1908, 15 Painted Snipe and 200 Pin-tailed, and in 1909, 25 as against 130.

But even here, where they were so numerous, they occurred "discontinuously." There were certain fields in which I rarely failed to see one of these birds, while in others, not a quarter of a mile away and to all appearances just as suitable as regards food, moisture, and cover, I have never met with one.

I can offer no explanation of this uneven and sporadic distribution, and probably, as an authority on the subject of Geographical Distribution has said, the reason, if we could see it, would not appear to us as such.

As regards the systematic position of *Rostratula*, it is usually placed with the Snipes (Scolopacidæ) among the Limicolæ. Beddard, however, suggests that it is more nearly allied to the Jacanas (Parridæ) than to the Snipes. Although in some respects differing from the Scolopacidæ, *e. g.* in the nature of the trachea and the bill, *Rostratula* seems to have little claim to affinity with the Parridæ. Thus the skull is Snipe-like, and the bill, which differs from that of Snipes in having the upper mandible slightly longer than the lower, and overhanging it at the tip, is, in all other respects, Snipe-like and far longer than that of any Jacana; while, on the other hand, the toes are not conspicuously long, as they invariably are in those birds.

In habits *Rostratula capensis* may be described as intermediate between the Rails and Snipes; it certainly exhibits none of that love for open expanses of water which has earned for some species of Jacana the soubriquet of "Water Pheasant."

Though always found in "Snipe-ground," *Rostratula* prefers rather denser cover than do Pin-tailed Snipe, being especially fond of clumps of sedge and tall marsh-grass. During the hottest hours of the day it seeks shelter in the shady boundaries that skirt all paddy-fields. It is a very silent bird—in this, too, presenting a contrast to the noisy Jacanas,—and only once have I heard an adult utter any sound; on that occasion a wounded bird was seized by a dog, which caused it to give vent to a grating cry which might have come from almost any bird in the same circumstances.

The young birds, which I have kept in captivity on more than one occasion, keep up a rather plaintive "cheeping," though eating greedily and to all appearances well. At night, if disturbed (for instance, by a light), they ruffle their feathers, droop their wings, and make a loud hissing sound. The bill is, at the same time, lowered till the tip rests on the ground. This attitude is very suggestive of that assumed by some birds in displaying themselves before their mates.

The females of *R. australis* and *R. capensis* have coiled tracheæ; the tube in the former case is said to form four complete loops, but in the case of *R. capensis* there is only a half loop. In all cases the males have a straight trachea. It strikes one as rather strange that silent birds should be provided with complicated organs of voice, and in the present instance, at any rate, it may be that the bird is not as silent in its habits as is supposed.

The Painted Snipe is said to be a nocturnal feeder, though the young birds I kept always fed by day, and it is quite possible that it may also reserve its vocal efforts for the hours of darkness. If this be the case, it is not surprising that the cry has never been described, for, in the chaos of sounds that make up the "loud silence" of a tropical night, it is not easy to single out one and trace it to its source.

According to Legge the adult birds live principally on small mollusca. I have also seen them eat worms, and the young birds show no hesitation in swallowing earthworms, which, to an onlooker, seem several sizes too large for them.

I regret that I have never dissected out the nerve-terminations in the bill of *Rostratula*, for it would be interesting to know whether there is a dense plexus of non-medullated fibres derived from the fifth nerve similar to that found in the bills of the true Scolopacidæ.

The Painted Snipe is not an easy bird to flush; it lies very close, and when almost trodden on, rises silently, not uttering even the monosyllabic "Tchk," so characteristic of the Snipe. The flight is gliding and rather Owl-like, very different to the swift erratic twisting of the other Snipes; it is generally short, and the bird drops into cover rather suddenly.

On one occasion I saw a wounded *Rostratula* swim, and the young birds take to the water readily if attempting to escape pursuit.

There has been a good deal of speculation and surmise regarding the nesting-habits of *Rostratula* and the part played by the two sexes in the discharge of the parental duties. Legge states that the breeding-season lasts from November to May, or else that the birds nest indiscriminately at all times of the year. I obtained either the eggs or young as follows:—

September 31, 1907.........	4 eggs.
October 4, 1907	2 young birds.
February 11, 1906	3 eggs.
February 18, 1908	3 young birds.
March 11, 1910	3 young birds.
March 14, 1910	3 nearly adult young.

These dates, though hardly numerous enough to justify a decided opinion, seem to indicate that October to February are the favourite breeding-months.

The nest is at best a very rough structure, consisting of stubble bent and trodden down to form a slight concavity; it is placed in the open paddy-fields, and has no "roof" like that of some water-birds.

The eggs are rather large for the size of the bird, markedly pointed at one end, and of a reddish-buff colour, with large spots and splashes of black.

Darwin mentions it as a possibility that the cock bird may bear the onus of incubation, as well as performing the duties of "childward care." Legge, Jerdon, and others cite the same possibility, quoting the general femininity of the cock bird as an argument in its favour.

My own observations are that the male does incubate the eggs; but whether this is the invariable rule, and whether the hen takes any share in the task, I cannot definitely say, though the evidence seems against the latter probability.

On the second occasion on which I obtained the eggs of this species, I was walking through a particular field for the third time in a quarter of an hour, when a Painted Snipe, a cock bird, rose a couple of feet in front of me. No sooner had I shot the bird than it struck me that it might have risen off a nest, and, on looking in the place which the bird had just left, I found a nest with four eggs which were quite warm. On this occasion the hen bird was nowhere in the vicinity; at any rate, I did not succeed in flushing her in spite of much tramping about.

This absence of the hen, which I have always observed when I have found the cock with either eggs or young birds, is the more strange in view of the fact that at other times the birds are almost invariably found in pairs.

On a second occasion I was taken to a nest containing eggs by a "Snipe-boy," who said that it had been found the previous day by a party of reapers, and the hen refusing to leave the nest one of them had killed her. Enquiries proved that what the boy called "kirichi" ("hen") was, in all probability, the less brilliant cock bird, to judge from his description. Too much reliance must not, however, be placed in this instance, as the native ideas of colour are notoriously vague and unreliable.

In every case in which I have come upon the young birds they have been in the care of their male parent, the hen being either not in the neighbourhood at all or else some distance away. There consequently seems no reasonable ground to doubt that the cock bird does look after his offspring until such time as they are capable of looking after themselves.

Judging from the following instance it would seem that the period of paternal care is a somewhat protracted one:—

On the 14th of March, 1910, I flushed four Painted Snipe in a small field in very rapid succession, and shot them all. To all appearances they were all adult males, and it was only on close examination that I found that three of the four birds were young in their first plumage; the last was, presumably, their long-suffering parent.

Darwin states that, "When the adult female is more conspicuous than the adult male . . . . the young birds of both sexes in their first plumage resemble the adult male." This law is well exemplified in the case of *Rostratula capensis,* and it is only after the female has attained maturity that she dons the brilliant plumage characteristic of her sex. Some regard it as likely that the hen *Rostratula* exhibits seasonal dimorphism in her plumage, assuming her gorgeous dress only during the breeding-time, while at other seasons she resembles the male. Personally, I have shot females in characteristic plumage in all the months of the year, excepting May, June, and July, when, indeed, I have hardly ever gone into a paddy-field. The fact that the hen bird wears her gayer dress during nine months of the year *at least*) renders it highly probable that she retains it all the year through, and, except in her first year, has no other.

The theory by which Wallace accounted for the duller plumage of hen birds, as compared with that of their mates, finds additional support in the case of *Rostratula capensis.* Here the female, with the acquisition of those characters which unfit her for the perils of maternal duties, has lost the maternal instinct, which has, to meet the lack, been developed in the male.

Concerning the courtship of these birds, I unfortunately know nothing, and as they are comparatively scarce and of a shy disposition, it would require much time and infinite patience to obtain accurate information on the subject.

One is tempted to assume that along with the acquisition of the physical characteristics of maleness, such as superior size, more conspicuous plumage, and complicated trachea, the female of this species has also acquired the ardour and pugnacity of the male, and that the courter has now become the courted.

It would certainly not be surprising to find that this is actually the case, for if the loss of the maternal instinct be a step taken upon the road which leads to masculinity in all things—and it surely is that,—then the females of *Rostratula capensis* have not much further to travel along that road.

I have omitted to describe the plumage of the sexes of *Rostratula capensis* at length, as such a description may be found in many of the ordinary text-books.

XXXI.—*Notes on the Vultures found in the neighbourhood of Simla and adjacent ranges of the Himalayas.* By P. T. L. Dodsworth, F.Z.S., M.B.O.U.

Ornithology has been studied for so many years in India, that it seems somewhat absurd to have to admit at the present day, that the exact limits and distribution of such large birds as the Vultures in this country have not yet been fixed with precision. Indeed, to go a step further, recent enquiries * have revealed the startling fact that systematists are not yet agreed as to whether one of the common Indian species of Vultures is identical with, or distinct from, the European Griffon! The bird referred to is the common Bay Vulture—the *Gyps fulvescens* of Hume. Dr. Sharpe considered this bird a distinct species. Blanford, on the other hand, treats *Gyps fulvescens* as synonymous with *Gyps fulvus* of Gmelin, and lumps the two birds together on the ground that they are identical.

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* Journal Bombay Natural History Society, vol. xxi. 1912, pp. 1331, 1332.

The question which therefore now arises is this. Are Ornithologists in India going to allow this doubtful state of affairs in regard to such large birds as Vultures to continue any longer?

It is true that Vultures in the flesh are by no means pleasant creatures to handle, and that their skinning is a frightfully dirty job; but the difficulty can be got over to a large extent by shooting them in the early part of the day, before they have gorged themselves, and when their crops are practically empty, and then preparing them for specimens. What is really the most trying part of the business is the sexing of these foul-feeders, especially on a hot summer day, and it is then that the true mettle of the naturalist is tested. For purposes of comparison and distribution, however, it is quite immaterial whether a particular specimen is a male or a female, and the sexing may therefore conveniently be dispensed with. What is actually wanted, for the purpose in view, is well prepared skins of fully *adult* birds from all parts of India, with complete data as to locality, etc. For unless a large series of specimens is forthcoming, it is obviously impossible to generalise correctly.

For some time past my friend Mr. Alexander Jones and myself have been making observations with regard to the various species of Vultures which are to be found in the hills here, and on comparing notes the other day we found that we had arrived at almost identical conclusions. As our observations may be of some use in helping to clear up a few of the doubtful points referred to above, we have been induced to publish them, and trust that they will also encourage other Ornithologists in India to record their experiences.

1. Vultur monachus Linnæus. The Cinereous Vulture.
   Blanford, Fauna Brit. India, Birds, No. 1190.

This bird is a decidedly rare species in these parts, and, during the course of observations extending over many years, we only remember seeing it on three occasions. Once at Simla (elevation 7000 feet) in December; then again a single bird in February about 25 miles south of Simla, at an altitude of 5000 feet; and, lastly, a solitary bird, in March, at Kandlu, near Bilaspur, at about 2500 feet.

This Vulture is said to be resident in the Himalayas, and Hume was of opinion ('Rough Notes,' p. 1) that it breeds in these mountains, west of the River Ganges, and thought that nests were likely to be found anywhere in precipitous places, or on large trees in the sub-Himalayas. Bearing in mind the remarks of this great Ornithologist, we made an exhaustive search last winter for eggs over large tracts of these hills, but without success. Not a single nest was seen anywhere.

For the only egg which we possess we are indebted to the generosity of Lt.-Col. H. Delmé-Radcliffe, who took it on the 5th of April last, on the Zarghun Mountain (10,500 feet) in Baluchistan, shooting the old bird off the nest. We understand that Lt.-Col. Delmé-Radcliffe has sent a separate account about the taking of this egg to the 'Journal of the Bombay Natural History Society,' and shall therefore confine ourselves to mentioning only the following facts connected with the specimen:—

In shape the egg is a broad oval, pointed towards one end. The texture is coarse, and there are some white pimply lumps on the large end. The lining is a pale yellowish green. The ground-colour is white, and it is smudged and speckled, chiefly towards the small end, with dark red-brown. It measures 3·5″ by 2·75″.

Blanford states that "*in India* this bird is resident in *Afghanistan*, etc." This statement is not very clear as it is geographically inaccurate, but it is apparently based on the remark made by Barnes in volume ix. of 'Stray Feathers,' page 214, to the effect that *V. monachus* is found in the neighbourhood of Chaman, and nests on the Khojak. As these tracts have now been included in British India, under the Indo-Afghan Boundary Settlement of 1893–1894, and as this Vulture has recently been found breeding in Baluchistan, we take the opportunity of pointing out that in a future edition of the 'Fauna' the sentence "in India this bird is resident in *Afghanistan*, etc." should be corrected, and should run "in India this bird is resident in *Baluchistan*, etc."

2. **Otogyps calvus** (Scopoli). The Black Vulture.
Blanford, Fauna Brit. India, Birds, No. 1191.

This Vulture is fairly common at Simla and in the lower hills. It is to be seen throughout the year. It ranges as high as 8,000 feet in the temperate region of the Himalayas. We have seen it gyrating over lofty peaks here in mid-winter. It generally keeps in pairs, but it is by no means unusual to see from four to six birds together.

We have never yet found a nest of this bird in the hills here, but have not the slightest doubt that it breeds during March and early part of April in the subtropical portions of the Himalayas from about 1000 feet downwards (see, in this connection, Kelham in 'Ibis,' July 1909, pp. 417, 418).

Hume thought that these Vultures paired in the air only, but we are unable to agree with him in this respect, as we remember having seen them some years ago *in copula* on trees.

3. **Gyps fulvus** (Gmelin). The Griffon.
Blanford, Fauna Brit. India, Birds, No. 1192.

In the 'Journal of the Bombay Natural History Society,' volume xxi. 1912, pp. 1331, 1332, we made an enquiry as to whether this species had ever been observed in the Himalayan districts of the Punjab, but up to now have received no replies. We think that, in spite of what Blanford says in the 'Fauna,' it may be taken as fairly certain that it does not occur in these parts. We have never seen it here; and it apparently does not occur in Chamba (*cf.* Marshall, 'Ibis,' 1884, p. 404).

It seems, however, only right to mention that Major H. A. Magrath, who is one of our keenest observers, and who has had an extensive knowledge of the N.W. Himalayas, remarks *in epist.*:—"*Gyps fulvus* is, I believe, fairly common in the lower ranges of the western Himalayas, though I cannot say I have noticed it at Simla, but I imagine it must occur there. The common Vulture round Murree and in the Vale of Kashmir I have always put down as this bird. *Gyps himalayensis* is very common of course higher up. *Gyps tenuirostris* I do not know, and have never seen. But the Vulturidæ, I must confess, are not a group I have ever interested myself much in."

In 'Stray Feathers,' volume v. p. 123, which we had overlooked in making the above enquiry, we find that Hume has already recorded that his *Gyps fulvescens* (= *Gyps fulvus*) "never occurs in the Himalayas."

4. **Gyps himalayensis** Hume. The Himalayan Griffon.
Blanford, Fauna Brit. India, Birds, No. 1193.

This magnificent Vulture, first described by Hume—identical with *Gyps nivicola* of Severtzov, the Snow-Vulture of Turkestan and the Mongolian frontiers—abounds throughout the north-west Himalayas, and is a common Bird of Prey in the neighbourhood of all the sanitaria along these ranges. It generally keeps above altitudes of 3000–4000 feet, and only descends to lower elevations when compelled to do so in search of food. Once the appetite has been satisfied, it immediately returns to its original haunts. It is *par excellence* the Vulture of the mountains, and seems equally at home in the subtropical region of the Himalayas as in the desolate and inhospitable regions embraced by the Tibetan or Alpine zone.

It roosts in large colonies on precipitous ridges and cliffs, though it is not unusual to see a solitary bird occasionally perched on the summit of some gigantic tree. The roosting-sites are used year after year, and can easily be located from long distances by their white appearance, caused by the droppings of the birds.

It does not venture forth in quest of its prey till long after the sun has risen. On quitting its nocturnal haunts, it flies at first low along the mountain-side, and then rapidly soaring upwards in wide gyrations is soon lost to view in the azure of the sky. One has only to take up a station on some prominent peak during the middle of the day here, and in a short space of time several of these huge birds may be seen, as mere specks, sweeping the heavens at immense heights in all directions—now from north to south, now from east to west. But these are only the birds that can actually be seen. How many more must there be among the clouds that are beyond the range of human vision? Whence do they come? Whither do they go? Are all these movements aimless or without a definite purpose? To the casual observer they may doubtless appear so, but not to the naturalist, who knows well from long experience that each and every bird is ever watchful, ever on the alert. Not a single movement on the part of the lowest ever escapes his companions soaring above him. Let only one of these make a swoop towards the earth, or descend on some carrion which lies in the valley below, and the air soon resounds with the downward rush and vibrations of mighty pinions.

Times out of number we have satisfied ourselves that the Vultures soaring in the lowest stratum of the atmosphere are guided in the first instance to their quarry *not by scent*—for if it is at all concealed, they have considerable difficulty in finding it—but by the clamourings and movements of Jungle-Crows (*Corvus macrorhynchus*), which seem to have an extraordinary faculty for locating any carrion.

We have stood and watched, from close quarters, large flocks of these Vultures, sometimes as many as 60 to 80 birds, struggling and squabbling over a single carcass, and must confess that these exhibitions have always struck us as being at once the most revolting and the most instructive of sights to behold. The entrails and liver of the defunct animal are generally the first which are disposed of, then follow the fleshy parts, and the rapidity with which these disappear is truly astonishing. The bones and skin are the only parts which escape attention.

The duration of one of these orgies is seldom prolonged beyond half an hour, but this short space of time amply suffices for the entire disposal of the body of a huge bullock or buffalo. After their repast the gorged Vultures lazily flap away and settle on the nearest cliffs, there to digest their food, and to preen their feathers leisurely and clean themselves. It has been generally supposed that these birds never indulge in a wash, but this is an altogether erroneous idea, as we have frequently come across large numbers of them bathing and cleaning their blood-stained feathers in buffalo-tanks and in mountain-streams.

A question we have often asked ourselves is, "Whether these huge Birds of Prey are able to procure food daily?" We have shot them at all times of the day and late in the evenings, when they have been returning to their roosting-haunts, but have generally found that their crops were quite empty. Judging from these cases, and from various enquiries which we have made, we are convinced that the Vultures, in these parts at any rate, are seldom able to procure food daily, and only have a hearty meal perhaps once or twice in a week—never more often.

As noticed by Hume, this Vulture delights to breed on the ledges of precipitous cliffs. We have never yet seen a nest on a tree. The largest number of nests which we have found in a single locality was six, but each nest was separated from the other by at least 50 feet. It is, however, by no means unusual to find a solitary nest on a cliff.

It has been remarked that the nests of this bird vary much in character, and that sometimes there is no nest at all, but we are unable to endorse the latter part of this statement. In all cases we have invariably found the egg reposing on some kind of a nest; usually the structure is a huge irregular platform, composed of thick sticks and twigs, with a central depression, which is lined with grass, feathers, etc. The nests varied from two to three feet in diameter, and the materials composing them weighed from about 50 to 150 lbs.

So far as our observations go, it would seem that new nests are always built each year.

The nesting-materials are carried in the beak, and we have proved that both birds share in the labours of incubation.

The earliest date on which we have taken eggs is the 14th of January, and the latest the 18th of March. Out of 12 specimens we find that 9 were taken in January, 2 in February, and 1 in March.

In length the eggs varied from 3·52″ to 4·17″, and in breadth from 2·7″ to 2·92″ ; the average of 12 specimens is 3·81″ × 2·77″.

As observed by Hume, the shape of the eggs is very variable, but the majority of the specimens are "rather long pointed ovals." The remainder are broad ovals, slightly pointed towards the small end.

Hume does not notice the fact that some of the eggs exhibit white pimply lumps on their surfaces, generally towards the large end.

The proportion of marked to unmarked eggs in our specimens is about equal, but the heavily marked eggs are much rarer.

These Vultures do not soil their eggs during incubation like *P. bengalensis*.

We have never yet seen an immature bird of this species breeding ; all the nests, without a single exception, which have come under our notice have invariably been tenanted by adult birds.

In all instances the parents were got off their nests without any difficulty ; but in one case only the old bird refused to budge, and attempted to bite when anyone went close to her. She had eventually to be poked off the nest with a stick.

These Vultures pair on cliffs, and while *in copula* make an extraordinary hoarse roaring noise, which can be heard from a great distance.

In conclusion, it may be worth mentioning that though 50 to 70 of these Vultures may affect a particular range of cliffs, not more than five to six pairs at the utmost will ever be found breeding there. The rest of the birds are always to be seen on the same cliffs, but what happens to them? How is it that they do not also breed? We have noticed this somewhat singular state of affairs to prevail among other birds (though do not remember ever having seen it discussed anywhere), and have found that a large proportion in each group do not breed at all during the year, while others of the same species are actively nesting. Our ignorance in regard to the real nature of the causes which act as a check to the increase of organisms is still most profound, but it seems to us that, if our observations in this respect are correct, and are found hereafter to be more or less of universal application, some additional light might, perhaps, be thrown on the general question of the bar to the multiplication of species.

5. **Gyps tenuirostris** Hodgson. The Himalayan Long-billed Vulture.

Blanford, Fauna Brit. India, Birds, No. 1195.

Blanford gives the distribution of this species as "throughout the lower Himalayas, and near their base as far west as Kashmir, etc.," but we have never seen this bird in the lower hills here. According to Ward (Journ. Bomb. Nat. Hist. Soc. vol. xvii. 1907, p. 728) it is to be found "on the outer slopes of the Punjab range," but further observations appear necessary.

6. **Pseudogyps bengalensis** (Gmelin). Indian White-backed Vulture.

Blanford, Fauna Brit. India, Birds, No. 1196.

The Indian White-backed Vulture is common in these regions from about the beginning of April to about the end of October or middle of November, and at such times ascends the hills to altitudes of from 7500 to 8000 feet. During the winter months it moves down to lower elevations (4000 feet). It is therefore subject to a partial migration.

It associates freely with the Himalayan Griffons, and we have seen both species feeding simultaneously off the same carcass.

We found this Vulture breeding freely, during December and January, in colonies on *Bur* and *Peepul* trees (*Ficus bengalensis* and *Ficus religiosa*), close to Koti Station, on the Simla-Kalka Railway, at an elevation of 3600 feet.

We are in a position to corroborate the following points:—

(*a*) These Vultures pair on trees, and while *in copula* utter the hoarse roar noticed by Jerdon (Hume, 'Rough Notes,' p. 31).

(*b*) Both birds sit on the eggs. When the mate arrives, the sitting bird emits a low squeak like a young one, shakes its wings, and flies off, its place in the nest being immediately taken by the new arrival.

(*c*) We found that Hume's rule (Hume, 'Rough Notes,' p. 27) that the period the egg has lain in the nest can be foretold by the condition of the lining leaves generally holds good—so far we have only met with one exception.

We do not remember ever having seen more than four nests on a single tree, and have frequently found solitary nests belonging to *old* birds.

We have never found more than one egg in a nest. The proportion of marked to unmarked eggs works out, in our specimens, to about 1 to 2. Hume states that it is about 1 to 5.

The eggs measure from 3·8″ × 2·0″ to 2·93″ × 2·28″, and 36 specimens average 3·32″ × 2·53″.

In all cases the old birds were got off their nests without any difficulty, but in one instance we had to poke the parent with a stick and regularly drive her off a hard-set egg, which she was covering at the time.

Once the nests are robbed, we found that the birds did not lay in them again, but they hung about in the vicinity. On two occasions we noticed that the nests which we had previously robbed were pulled to bits by the old birds; in this connection we would invite a reference to pages 28, 29 of Hume's 'Rough Notes.'

Another point worth mentioning is that, during the middle of the day, we noticed that some of the old birds left their nests, which contained hard-set eggs, and sat for a long time by the sides of the structures. The only conclusion we can arrive at in regard to this singular proceeding on the part of the birds is that they were apparently aware that the heat from the sun at certain hours was sufficient for purposes of incubation.

7. Neophron ginginianus (Latham). The Smaller White Scavenger-Vulture.

Blanford, Fauna Brit. India, Birds, No. 1197.

This is another species which is subject to a partial migration in the hills here. It is common at Simla (7000 feet) from March to November, and during the summer ascends as high as 8000–8500 feet. In the winter it moves down to the low hills.

This Vulture breeds in the Himalayas as high as 6000 feet, and we have taken several eggs in the neighbourhood of Simla. It lays here during the latter half of April. The eggs are invariably two in number. The average measurements of 8 Himalayan specimens are 2·57″ × 1·96″.

The nests are always placed on the ledges of cliffs, and the same nest seems to be frequented year after year.

These Vultures pair on the ground. We have never seen an immature of this species breeding.

We have shot these Vultures in various stages of plumage, but have not yet been able to fix definitely the exact period which elapses before a nestling attains the adult plumage. So far as our observations go, we are inclined to think that it takes fully three years.

The Egyptian Vulture—*Neophron percnopterus* (Linnæus)—does not occur in these parts.

XXXII.—*A few Remarks on the European* Certhiidæ.

By Collingwood Ingram, F.Z.S., M.B.O.U.

(Text-fig. 2.)

Thanks to the generosity of the Hon. Walter Rothschild (who very kindly lent me a number of skins from the Tring Museum to supplement my own specimens), I have recently been able to compare an exceptionally interesting series of Tree-Creepers with those in the British Museum. With this mass of material at my disposal, the separation of the various subspecies becomes a comparatively easy matter.

Most ornithologists now divide the Tree-Creepers of the western Palæarctic Region into two groups, taking *Certhia familiaris* L. as the type of one and *Certhia brachydactyla* Brehm for the other. Although the various forms of these birds generally inhabit tolerably well-marked areas, their ranges often coalesce and they are not infrequently found together. This seems to me to be really the only argument in favour of giving the two birds specific rank, for their habits and mode of nidification are practically identical, while their superficial differences appear to be absurdly inadequate. Among the European Tree-Creepers only the following so-called specific characters appear to be at all constant:—

C. familiaris.	*C. brachydactyla.*
Long hind claw. (Average length 9 mm.)	Short, arched hind claw. (Average length 7·5 mm.)
Under wing-coverts pure white.	Under wing-coverts usually marked with dusky.
Under surface, as a rule, pure white; almost invariably whiter than in *C. brachydactyla.*	Under surface usually dirty white; often washed with tawny buff near the belly.
(*Note.*—The short bill is a character only applicable to the northern races, *C. f. familiaris*, *C. f. macrodactyla*, and *C. f. britannica*. In these, however, it is very well marked.)	

It has been stated that the Short-clawed Tree-Creeper* never, or hardly ever, ranges above 1000 metres, but this is not a fact. I have several times shot *C. brachydactyla* at a greater height, and possess two examples taken in the Maritime Alps at 1700 metres: while representatives of both this and *C. familiaris* were obtained by Mr. Rothschild's collector near Cauterets in the Pyrenees at an elevation of about 1400 metrés. As a breeding species, however, the southern race of *C. brachydactyla* is found alone on the plains below, just as *C. familiaris* reigns supreme in the still more elevated pine-forests.

The Long-clawed Tree-Creepers of the Continent are said to have a predilection for coniferous trees, while the various forms of *C. brachydactyla* are supposed to prefer other kinds of timber. In my experience this certainly seems to be true, but in connection with this alleged preference we must not forget that conifers usually predominate at the high elevations frequented by the former species, in which case, of course, they would have no choice but to affect these trees. The English *C. familiaris britannica*, at any rate, displays no such partiality for conifers. Dr. Hartert has also pointed out that *C. familiaris* is not invariably found in pine-forests, but may be sought for in mixed woods and especially among beeches.

Bailly declares that the Alpine bird is more wary than the lowland species, and that its call-note is softer in tone—"*son cri de rappel est constamment moins aigu et plus doux*" (Orn. de la Savoie, ii. p. 491). I have met with both species in the same wood in the Maritime Alps, and I frankly admit I did not then detect any difference in their voice or habits; but, as I did not, at that time, appreciate that the two birds were distinct, I might have easily overlooked the subtle difference. Dr. Hartert, at any rate, assures me that their notes are easily recognisable.

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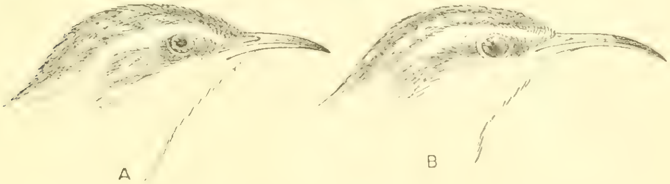
* On account of Brehm's specific name, *brachydactyla*, this bird has often been unhappily termed the Short-*toed* Tree-Creeper. Of course I cannot change its recognised scientific appellation, but I do not propose to further perpetuate an obvious error by translating it into my own language, for it is well known that it is the *claw* and *not* the hind toe, or hallux, that is slightly shorter in this bird.

With regard to the several forms of *C. brachydactyla*, I have nothing to add to Dr. Hartert's admirable account of these birds ('Vögel der paläarktischen Fauna,' i. 1905, pp. 323–326), beyond that my own collection shows that *C. b. ultramontana* Hart. is found (as might be expected) right across southern France from Italy to Spain, its northern range in the first-named country being apparently limited by the *Massif Central.*

But on turning to the *C. familiaris* group, I find that there are several points that still require some elucidation. For instance, a large series makes it obvious that the bird inhabiting the southern Alpine districts is not the same as that found in the Vosges Mountains and Germany. The former is not only a slightly larger bird, but differs materially in the tone of its plumage and the dimensions of its bill.

Text-fig. 2.



A. Bill of typical *Certhia familiaris* and *C. f. macrodactyla.*

B. Bill of typical *C. f. costæ* and *C. f. pyrenaica.*

In fact, the bill (averaging 16·25 mm.) is normally quite as long and as slender as in the typical *C. brachydactyla*, while, on the other hand, this member appears to be almost invariably short and comparatively stout in the Vosges and German specimens (average length of bill in nine examples 13·5 mm., maximum about 15 mm.), in which respect they approach the typical and English forms. In coloration the differences in the "warm" and "cold" shades of the dorsal plumage is analogous to that found in *C. b. brachydactyla* and *C. b. ultramontana.* The southern bird, lacking to a great extent the tawny-buff tints on the back and wings, and being heavily but indistinctly marked with white, offers a very grey—almost hoary—appearance when placed beside a Vosges specimen. The question is, can this Alpine bird be Bailly's *Certhia costæ* (*cf.* Bull. Soc. d'Hist. Nat. de la Savoie, 1852, p. 11)? Unfortunately, I have not been able to examine critically any specimens from the type locality, but there is every reason to suppose that the Savoyan bird is identical with that of the southern Alps. An example from Switzerland and a second from Vorarlberg in the Tring Museum, even if not quite so grey in coloration, agree well in other respects with my own specimens from the Maritime Alps, while there is a bird in the Bureau collection, from Tournoux in the Basses-Alpes, precisely similar to my own; and we have Bailly's authority for saying that his *C. costæ* is found in this department.

Certainly that writer's description of the plumage of his Savoyan Tree-Creeper (Orn. de la Savoie, 1853, ii. p. 487) does not altogether tally with my pale-backed birds from south-east France; but then one must allow for a certain amount of error in the older accounts of the Certhiidæ, for these birds were formerly very imperfectly known; and, moreover, it is highly probable that Bailly had only *C. brachydactyla* or *C. b. ultramontana* with which to compare his new species. Referring to the bill, he remarks that this is very variable, sometimes measuring from 14 to 15 mm. and sometimes from 16 to 17 mm. On the whole, therefore, I am bound to associate my Maritime Alps birds with those of Savoy and the rest of the Alpine system. This being so, it is incumbent upon me to reinstate Bailly's name, *Certhia familiaris costæ*, for this mountain race*.

In the upper forests of the Pyrenees a similar long-billed form of *C. familiaris* is found, differing only from *C. f. costæ* in the browner and warmer tones of its plumage. For this apparently undescribed form I propose the name

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* The only Corsican example in the British Museum appeared to be indistinguishable from the Vorarlberg specimen in the Rothschild collection. It is possible, therefore, that Dr. Hartert's *C. f. corsa* (Vög. pal. F. i. p. 320) may prove to be inseparable from *C. f. costæ*.

CERTHIA FAMILIARIS PYRENAICA, subsp. nov.

Similar to *C. f. costæ*, but generally much browner above. As with *C. f. britannica*, this effect is partly produced by the whitish centres to the feathers on the back being broadly edged or washed with tawny. Rump bright tawny. Underparts pure white. Wing about 65 or 66 mm.

Types in the Tring Museum, ♂ ♀. Reine Hortense, nr. Cauterets (altitude 1400 metres), 30.xii.06 and 6.ii.07. (*Note.*—When he published the account of the Certhiidæ in his 'Vögel der paläarktischen Fauna,' Dr. Hartert had not seen these Pyrenean specimens.)

According to my investigations we now have the following forms of *C. familiaris* inhabiting comparatively well-defined areas in western Europe:—

A. Short-billed birds.

i. **Certhia familiaris familiaris.**

Certhia familiaris Linnæus, Syst. Nat. 1758, p. 118: Sweden.

Rumania, E. Germany (Hartert), Scandinavia and N. Russia, across northern Asia.

ii. **Certhia familiaris macrodactyla.**

Certhia macrodactyla Brehm, Handb. Nat. Deutsch. 1831, p. 208: Germany.

The forests of western Germany, Belgium, and N.E. France (Vosges Mountains).

iii. **Certhia familiaris britannica.**

Certhia britannica Ridgway, Proc. U.S. Nat. Mus. v. 1882, p. 113: England.

The British Isles. (*Note.*—Irish specimens are inclined to be very tawny in coloration, and often have the belly and flanks washed with buff.)

B. Long-billed birds.

i. Certhia familiaris costæ.

Certhia costæ Bailly, Observations sur les mœurs et les habitudes des oiseaux de la Savoie, 1847 *: Chambéry, Savoy.

Essentially a mountain species, inhabiting the Alpine system at elevations from about 1000 metres upwards.

ii. Certhia familiaris pyrenaica.

Certhia familiaris pyrenaica Ingram, *supra*: Cauterets, Pyrenees.

The upper forests of the Pyrenees.

iii. Certhia familiaris corsa.

Certhia familiaris corsa Hartert, Vög. pal. F. i. 1905, p. 320: Corsica.

The mountains of Corsica.

XXXIII.—*On a Collection of Birds from Southern Abyssinia, presented to the British Museum by Mr. W. N. McMillan.*—Part I. Passeres. By W. R. Ogilvie-Grant.

(Plate XII.)

In the October number of the 'Ibis,' 1907, I published a report on a valuable collection of birds made by Mr. W. N. McMillan during an expedition to the Sobat and Baro Rivers in the Anglo-Egyptian Sudan, between November 1903 and March 1904. Mr. P. C. Zaphiro, a good field-naturalist and skilful taxidermist, was employed by Mr. McMillan, who in the most generous way placed the whole of his collection of birds at the disposal of the Natural History Museum.

Finding that this collection was most acceptable to the Museum, Mr. McMillan very wisely decided to employ the same collector to investigate the fauna of Southern Abyssinia, between Addis Abbaba and Lake Rudolf, where comparatively little collecting had been done.

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* I have been unable to see this rare pamphlet which is quoted by Bailly in his article in Bull. Soc. Hist. Nat. Savoie, 1852, p. 11.

Between the 20th of September and the 15th of November, 1904, Zaphiro collected in the neighbourhood of Addis Abbaba. On the 13th of December he commenced working southwards as far as Lake Zwai, and remained in that neighbourhood till the middle of February 1905. After another interval of two months he left Addis Abbaba on an extended trip which lasted till the 25th of September, 1905. Marching westwards, his route, which can be followed in detail both in the itinerary and on the map, led across the Gibbe and in Didessa Rivers, through Guma, Gomma, Jimma, and Kaffa to the Charada Forest, where nearly a fortnight was spent with great profit at varying altitudes of from 1000 to 6000 ft., and many rare and interesting species of birds were procured. Thence he continued his journey southwards through Konta, Kullo, Gofa, Uba, and the lower Omo River to the north-east end of Lake Rudolf, where he lingered for some days before turning eastwards to Lake Stefanie. The return journey northwards was by way of the Sagan River and Konso along the western shores of the great chain of lakes through Gamo, Baroda, Walamo, and Kambata.

A magnificent collection of more than three thousand bird-skins reached the Natural History Museum in 1906, and it seems necessary to offer some explanation and apology to Mr. McMillan for the long delay which has occurred in issuing a report which now appears for the first time. When the collection arrived, my colleague, the late Dr. Sharpe, expressed a wish to describe it himself. It was therefore placed in cabinets to await a favourable opportunity, which unfortunately never occurred up to the time of his death in 1909. Feeling that the Trustees of the Museum owed Mr. McMillan a very special debt of gratitude for again placing a most valuable collection of birds at their disposal, I have made every effort to get the present report finished, but the many calls on my time have greatly retarded the work.

Mr. D. A. Bannerman, who kindly undertook to make a preliminary examination of this large collection, has already described three species and a subspecies as new in the

Bulletin of the British Ornithologists' Club, xxvii. p. 84, and xxix. pp. 37–39 (1911). These are :—

Anomalospiza macmillani, p. 573.

Eremomela elegans abyssinica, p. 610.

Bradyornis granti, p. 631.

Ortygops macmillani, which will be mentioned in the second part of this report.

In addition to these I have distinguished as new in the present work :—

Salpornis salvadorii abyssinica, p. 597.

Also :—

Poliospiza elgonensis from Mt. Elgon, p. 581.

Mirafra pœcilosterna jacksoni from Kikuyu, p. 586.

Both based on specimens in the collection of Sir Frederick J. Jackson, which had been previously incorrectly identified.

Lastly :—

Bradyornis infuscatus seimundi, from Cape Colony, p. 636.

Bradyornis infuscatus ansorgii, from northern Benguela, p. 636.

It will be noted in looking through the following pages that a good many of the forms procured by Zaphiro were not previously represented in the National Collection, and of these we may mention the following :—

Sitagra ocularia abayensis (Neumann), p. 578.

Zosterops omoënsis Neumann, p. 594.

Zosterops jubaënsis Erlanger, p. 595.

Zosterops virens kaffensis Neumann, p. 596.

Tschagra habessinica erlangeri (Neumann), p. 600.

Prionops cristatus omoënsis Neumann, p. 603.

Apalis flavocincta malensis Neumann, p. 610.

Phœnicurus familiaris omoënsis (Neumann), p. 614.

Pentholæa pachyrhyncha Neumann, p. 618.
= (*Pentholæa macmillani* Sharpe).

Pinarochroa sordida schoana Neumann, p. 619.

Crateropus omoënsis Neumann, p. 622.

Pycnonotus arsinoë schoanus Neumann, p. 624.

Platystira cyanea æthiopica Neumann, p. 628.

Other species procured represent rare forms of which the Museum possessed one or two examples only.

A review of the species of the genus *Bradyornis* will be found on pp. 632–637. In working out the species in the present collection it was found necessary to revise the whole genus, and it is hoped that the notes, which are here published together with a key to the species, may aid others in the identification of these difficult birds.

It is to be regretted that no field-notes of any kind were made by the collector, and even the Itinerary, which is given below, had to be prepared with much labour from the localities and dates furnished by the labels on the specimens.

The map (Pl. XII.), which has been specially compiled from the latest surveys with the utmost care by Mr. H. F. Milne of the Royal Geographical Society, will be found to contain most of the localities mentioned in the Itinerary, villages excepted, and should prove of great assistance to those studying this little-known part of Abyssinia.

In the quotations of authors given below the following abbreviations are used :—

> Reichenow, "Vögel Afrikas," is quoted as "Reich."
> Shelley, "Birds of Africa," is quoted as "Shelley."

Itinerary of P. C. Zaphiro's Expedition.
September 1904 to September 1905.

1904.	
Sept. 28–30.	Mt. Yeka, 8000 ft.
30. October 1.	Addis Abbaba.
3.	Akaki River.
4–5.	Antoto.
6.	Raguel.
7.	Dildila, 8500 ft.
11.	Addis Abbaba.
12–13.	Akaki River.
14.	Dildila.
15.	Addis Abbaba.
16.	Antoto.
17.	Managasha Forest.
18.	Addis Alam, [illegible] ft.
1904 (*con.*).	
October 19.	Lake Koya.
22.	Goulala, Akaki River. Managasha Forest.
23.	Make River. Goulala, Akaki River.
24–28.	Managasha Forest.
November 1.	Wodjadja.
3–7.	Mt. Barka, Managasha.
8.	Managasha.
12.	Holata.
13.	Holata and Addis Alam.
14.	Addis Alam. Mt. Mergeta, 10,000 ft.
15.	Sombo.

1904 (*con.*).

Between the 16th of November and 12th of December no collecting appears to have been done.

December 13. Lake Koya.
14. Hawash River.
18–20. Lake Koya.
20. Lake Zwai.
23. Mukki R., Lake Zwai.
24–29. Lake Zwai.

1905.

January 8. Lake Zwai.
9–10. Galla, Lake Zwai.
15–17. Maroko, Lake Zwai.
18. Lake Zwai.
19. Dipessa, Lake Zwai.
20–23. Bulbula, Suksuki R.
24. Djila, Arussi.
25–27. Ketchiba, Arussi.
February 1. Magno, Arussi.
2–3. Cathar R., Arussi.
4. Bourka, Arussi.
5. Dalota, Arussi.
6–10. Bourka, Arussi.
12–14. Lake Helene.

Between the 15th of February and the 19th of April no collecting appears to have been done.

April 20–24. Roke, Gudr R., 3800 ft.
25. Gamu, Fato R., 2600 ft.
26. Woudinak R.
24–28. Sayo, Gibbe R.
29–30. Nono, 3600 ft.
31. } May 3. } Limmu, Urguessa R., 2300 ft.
4–6. Didessa River.
7. Garoka, Bunno, 1600 ft.
8 & 9. Woletoka River, Guma, 2000 ft.
9. Gosso, Guma.
10. Didessa R., Gomma, 2000 ft.
11. Gale, Gomma, 2000–3000 ft.
12. Sadeteka, Gomma, 5100 ft.

1905 (*con.*).

May 13. Manno, Jimma, 4200 ft.
14. Jiren, Jimma, 4200 ft.
15–19. Kindjo, Jimma, 4500 ft.
20. Kuda, Jimma, 4000 ft.
21. Teho Korssa, Jimma, 5000 ft.
25. Kuda, Jimma.
26. Gojeb R., Kaffa.
May 28 to } June 6. } Charada Forest, Kaffa, 4000–6000 ft.
9. Adie Kola, Kaffa, 5600 ft.
10. Adie Kaka, Kaffa, 5400 ft.
12, 13. Dulla, Kaffa, 5000 ft.
14. Ela Plain, Konta.
15. Kowra, Konta, 4800 ft.
16. Choga, Kullo, 5200 ft.
17. Cateha, Kullo, 5500 ft.
17. Rotha, Kullo, 8000 ft.
18–19. Maila, Kullo, 6800–8000 ft.
20. Gendo, Kullo, 4200 ft.
21. Misha, Kullo, 7000 ft.
22. Dissa, Kullo, 4000 ft.
24. Omo R., Kullo.
25. Tchega, Gofa, 5500 ft.
26. Chacha, Gofa, 4200 ft.
27. Warke, Gofa, 6000 ft.
28. Maaje, Gofa, 5100 ft.
30. Gofa, 6200 ft.
July 1. Laima, Gofa, 6900 ft.
2. Tanga, Gofa, 7200 ft.
6. Alba Hill, Gofa, 11,000 ft.
7–9. Djaoula, Gofa, 8200 ft.
9. Zendo R., Uba, 4700 ft.
10. Yella, Uba.
11. Uchotehon, Uba, 4200 ft.
12. Zoula R., Uba, 4150 ft.
13. Bajka R., Baku, 4200 ft.
15. Acha Karo R., Baku, 4200 ft.
19. Tchalea R., Baku, 4000 ft.
20. Banna, N.E. of Lake Rudolf, 2600 ft.
21–22. Achoa, Banna, N.E. of Lake Rudolf, 2600 ft.

1905 (*con.*).

July 22. Djaoula, N.E. of Lake Rudolf, 2300 ft.
23, 24. Nitij Dingai, N.E. of Lake Rudolf, 2350 ft.
27. Ato Chebai, N.E. of Lake Rudolf, 3000 ft.
28. Djaoula, N.E. of Lake Rudolf, 2300 ft.
August 1. Kerre, Omo R., 2000 ft.
3. Bume, Omo R., 2000 ft.
4–7. Lake Rudolf, 2000 ft.
10–13. Amar Koshi, Mircha, 2400–2800 ft.
14. Karmina, 2400 ft.
15. Menno, W. of Lake Stefanie, 2000 ft.
17. Lake Stefanie, 2000 ft.
18–19. Wandu, Metti, 2000 ft.
20. Dire, Sagan R., 2200 ft.
21. Watta, Sagan River.
24. Dalbana R., Konso, 3200 ft.
27–28. Duro, Konso, 3500 ft.
30–31. Gato R., Konso, 3800 ft.

1905 (*con.*).

September 1. Soyo, Gamo, 3000 ft., Lake Ganjule (=Lake Bakate).
2. Elgo R., Gamo, 3000 ft.
3. Gamo, 3000 ft.
4. Sire R., Gamo, 2000 ft.
5. Ganta R., Gamo, 3000 ft.
7. Donne, Lake Abbaya.
8. Lake Abbaya (= Lake Margherita), 3000 ft.
10. Baroda.
11. Watchigo, Baroda, 3200 ft.
12. Mello, Baroda, 5600 ft.
13. Umbu, Walamo, 6000 ft.
14. Kucha Plain, Walamo, 6200 ft.
16. Gudeti, Walamo, 6200 ft.
17. Bedewotehow, Kambata, 6000 ft.
18. Artu, Kambata, 6000 ft.
19. Alaba R., Kambata.
20. Burburi R., Kambata, 6000 ft.
21. Wonebarak, Kambata, 6000 ft.
25. Alaba R., Kambata.

Family STURNIDÆ.

1. CINNYRICINCLUS LEUCOGASTER.

Cinnyricinclus leucogaster (Gmel.); Reich. ii. p. 679 (1903).

Examples of the Northern Violet-backed Starling were obtained near Addis Abbaba, Mergeta Mountain, Nono, Urgessa River, Didessa River, Gomma, and Gamo.

2. CINNYRICINCLUS VERREAUXI.

Cinnyricinclus verreauxi (Bocage); Reich. ii. p. 680 (1903).

Pholidauges verreauxi Ogilvie-Grant, Trans. Zool. Soc. xix. p. 263 (1910).

Examples of the Southern Violet-backed Starling were obtained at Gamo, where five males were shot along with examples of *C. leucogaster*.

The occurrence of both these closely allied species of *Cinnyricinclus* in the same locality is distinctly interesting and extends the known range of *P. verreauxi*, which had not previously been obtained so far north.

C. verreauxi, which is distinguished by having the outer web of the outer pair of tail-feathers partially white, ranges from South Africa northwards to the Congo, and to East and Central Africa (Fort Beni, Semliki Valley).

C. leucogaster, which has the outer web of the outer pair of tail-feathers uniform black, ranges from West Africa to North-east Africa and southwards to Niam-Niam.

3. Cinnyricinclus sharpei.

Pholidauges sharpii Jackson; Ogilvie-Grant, Trans. Zool. Soc. xix. p. 263 (1910).

An immature example of Sharpe's Starling, which is a rare species, was procured in Kaffa on the 10th of June.

4. Lamprotornis porphyropterus.

Lamprotornis porphyropterus Heugl.; Ogilvie-Grant, Ibis, 1907, p. 580.

Examples of this Purple-winged Glossy Starling were obtained in the neighbourhood of Addis Abbaba, Lake Helene, Lake Zwai, Bulbula, Uba, the Sagan River, and Baroda.

5. Lamprocolius chalybeus.

Lamprocolius chalybeus Ehrenb.; Ogilvie-Grant, Ibis, 1901, p. 611.

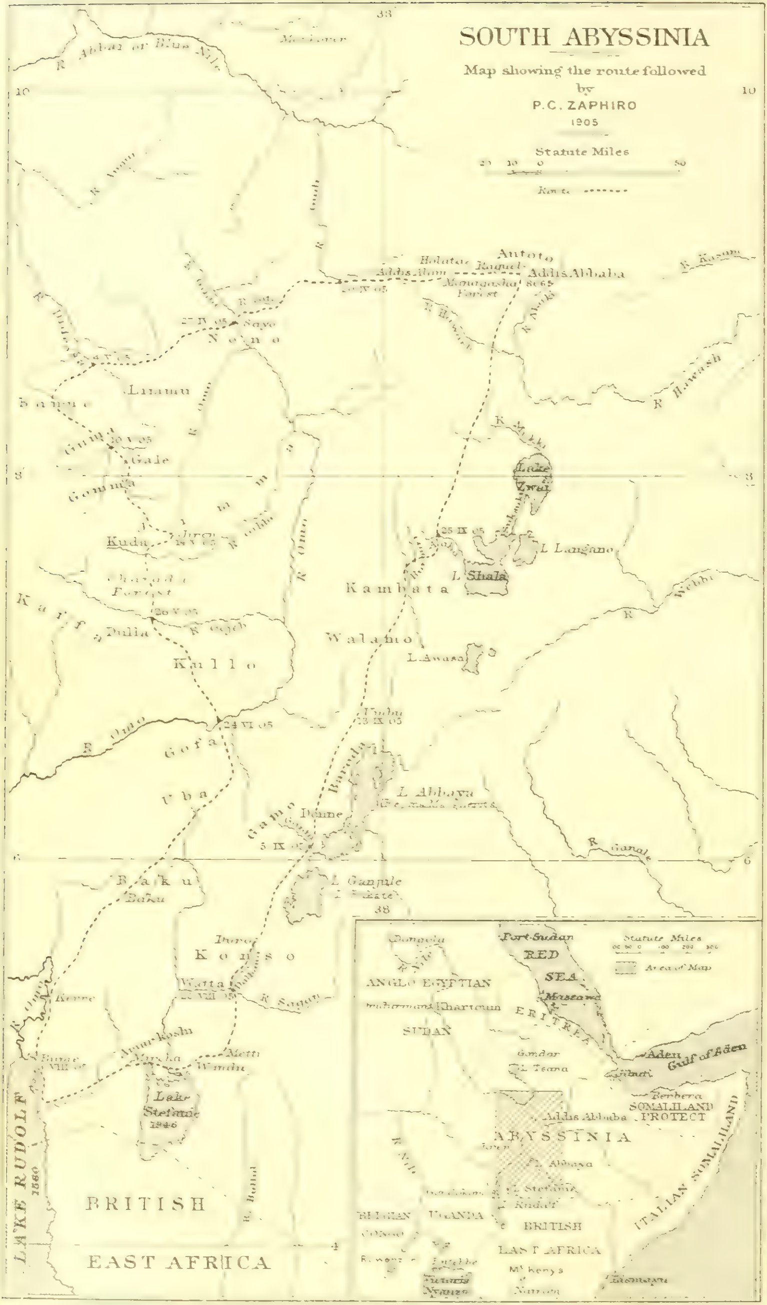
Examples of this Common Glossy Starling were procured at the Akaki River, Holata, and Mergeta, all in the neighbourhood of Addis Abbaba; also at Baroda, Kullo, Gama, Walamo, Kambata, and on an island in Lake Zwai, where it was evidently breeding, as a quite young male example was obtained together with adult birds in December.

6. Lamprocolius cyanogenys.

Lamprocolius cyanogenys Sundev. Œfv. Vet.-Akad. Förh. 1850, p. 127. [N.E. Africa.]

Lamprotornis cyanogenys Puch. Rev. Mag. Zool. 1858, p. 254.

As Pucheran pointed out in 1858, Abyssinian examples


SOUTH ABYSSINIA
Map showing the route followed
by
P.C. ZAPHIRO
1905
Statute Miles
20 10 0 50
Route
R. Abbai or Blue Nile
Antoto
Addis Abbaba
Holata
Adis Alem
Managasha Forest
Sayo
Nonno
Limmu
Gale
Gomma
Kuda
Kaffa
Pulia
Kullo
Kambata
Walamo
L. Awasa
Lake Zwai
L. Langano
L. Shala
R. Hawash
R. Webbi
R. Omo
Gofa
Uba
Gamo
Donne
L. Abbaya
L. Ganjule
Baku
Konso
Watta
R. Sagan
Amarkosha
Lake Stefanie
Metti
R. Ganale
LAKE RUDOLF
BRITISH
EAST AFRICA
R. Bulal
10
8
6
4
38
RED SEA
Port Sudan
Massawa
ANGLO EGYPTIAN
SUDAN
Khartoum
ERITREA
Aden
Gulf of Aden
Jibuti
Berbera
SOMALILAND PROTECT.
ABYSSINIA
ITALIAN SOMALILAND
UGANDA
BELGIAN CONGO
BRITISH
EAST AFRICA
Mt. Kenya
Nairobi
Area of Map

of the Little Glossy Starling differ from West African specimens of *L. chloropterus* Swains. in having a well-marked deep purplish-blue patch on the lesser wing-coverts. In *L. chloropterus* the wing-coverts are greenish steel-blue without any trace of purple. As this character appears to be perfectly constant in a tolerably large series of specimens from West Africa, I propose to distinguish the birds from N.E. Africa under the above name.

All the specimens procured by Zaphiro at Kullo and Gofa on the Omo River are immature, with the breast reddish-brown and the back dull golden-green.

Shelley, in his 'Birds of Africa,' v. p. 34 (1906), unites both the above-named smaller forms with the larger *L. sycobius* and *L. chalybeus*, all being placed under the latter name. On re-examining the question I am unable to agree with his conclusions, the differences between the various forms being easily recognised.

7. Spreo superbus.

Spreo superbus (Rüpp.); Ogilvie-Grant, Ibis, 1901, p. 612.

Specimens of the Spreo Starling in adult plumage were obtained at Sombo, near Addis Abbaba, Bulbula, Lake Zwai, Kambata, and Baroda, and a female in immature plumage at Kerre on the Omo River in August.

8. Spreo shelleyi.

Spreo shelleyi Sharpe; Bannerman, Ibis, 1910, p. 293.

A single immature example of Shelley's Spreo Starling was procured at Lake Stefanie in August.

9. Cinnamopterus tenuirostris.

Cinnamopterus tenuirostris (Rüpp.); Reich. ii. p. 703 (1903); Ogilvie-Grant, Ibis, 1904, p. 255; id., Trans. Zool. Soc. xix. p. 265 (1910).

The series of the Slender-billed Red-winged Starling procured at Dildila near Addis Abbaba, Kullo, and Gofa, include two immature female examples, which resemble the male parent, but are of a duller colour and have a shorter tail. The reader is referred to my remarks recently published in the 'Transactions of the Zoological Society,' and quoted above.

10. Amydrus rüppelli.

Amydrus morio rüppelli Verr.; Reich. ii. p. 699 (1903).

Rüppell's Red-winged Starling was procured at Dildila and in the Managasha Forest near Addis Abbaba, also in Kaffa and Kullo. A young male, killed in October, resembles the adult male, but has the iris blue-black, and shows very little gloss on the plumage; the first primary has the terminal third black, much as in *A. blythi*, an interesting point which has already been noticed by Dr. Reichenow.

11. Pœoptera stuhlmanni.

Pœoptera stuhlmanni Reich.; Ogilvie-Grant, Trans. Zool. Soc. xix. p. 266 (1910).

Several specimens of Stuhlmann's Starling were procured at Kullo in the middle of June. Sharpe was no doubt correct in uniting *P. greyi* Jackson with the present species; the type-specimen from Nandi agrees perfectly with the males procured by Zaphiro at Kullo. A young male has the plumage similar to that of the female including the chestnut inner webs of the primary quills: a few darker feathers like those of the adult male are visible on the sides of the head and middle of the breast.

12. Creatophora carunculata.

Dilophus carunculatus (Gmel.); Ogilvie-Grant, Ibis, 1907, p. 581.

Examples of the Wattled Starling were procured in Arussi, at Lake Helene, Konso, and Lake Ganjule. As is usually the case most of the specimens are immature birds and none show any trace of wattles. Those killed at Konso and Lake Bakate between the end of August and the beginning of September, are moulting the wing- and tail-feathers, and a specimen from the latter locality is the most adult in the series, its new quills being blackish with a cold greenish-lilac metallic gloss.

Family BUPHAGIDÆ.

13. BUPHAGA ERYTHRORHYNCHA.

Buphaga erythrorhyncha (Stanley); Ogilvie-Grant & Reid, Ibis, 1901, p. 612.

The Red-billed Ox-pecker, which was collected in the Barka Forest, near Addis Abbaba, at Lake Zwai and Kambata, calls for no special comment.

Family DICRURIDÆ.

14. BUCHANGA ASSIMILIS.

Buchanga assimilis (Bechst.); Ogilvie-Grant & Reid, Ibis, 1901, p. 613.

The African Drongo was met with about Lake Zwai, Kullo, Gofa, Konso, and also at Lake Rudolf.

Family ORIOLIDÆ.

15. ORIOLUS GALBULA.

Oriolus galbula Linn.; Ogilvie-Grant, Ibis, 1907, p. 582.

An immature male of the Common Golden Oriole was obtained at Holata on the 12th of November.

16. ORIOLUS AURATUS.

Oriolus auratus auratus Vieill.; Neumann, J. f. O. 1905, p. 232.

An adult male and an immature male and female of the North African Golden Oriole were collected in Gofa on the 25th of June.

17. ORIOLUS LARVATUS ROLLETI.

Oriolus rolleti Salvadori; Ogilvie-Grant, Ibis, 1891, p. 284.

Oriolus larvatus rolleti Neumann, J. f. O. 1905, p. 234.

A very large series of adult and immature examples of Rollet's Black-headed Oriole was procured in the following localities:—Gofa, Uba, Lake Rudolf, Lake Stefanie, Gamo, and Lake Abbaya, Lake Zwai and Lake Koya.

This form together with the typical *O. larvatus* and *O. per-*

cirali (which is easily distinguished by having the middle pair of tail-feathers black) belong to a section of the black-headed group of Orioles with the inner webs of *the innermost secondary quills deep black* and the outer webs olive margined with pale yellow. *O. monachus* and *O. m. permistus* belong to a different section of the black-headed group with the outermost secondary quills *olive on both webs,* only the inner margin being dusky. It is useful to bear these differences in mind as the birds are so much alike in general appearance that *O. l. rolleti,* were it not for its bright yellow rump, might easily be mistaken for *O. m. permistus.*

18. Oriolus monachus.

Oriolus monachus Gmel.; Ogilvie-Grant, Ibis, 1904, p. 256.

Oriolus monachus monachus Neumann, J. f. O. 1905, p. 232.

Oriolus meneliki Blund. & Lovat; Ogilvie-Grant, Ibis, 1900, p. 122, pl. ii.; Salvadori, Ibis, 1900, p. 398; Ogilvie-Grant, Ibis, 1900, p. 565, figs. 1–2.

The McMillan collection contains a fine series of this interesting Oriole procured in the Managasha Forest near Addis Abbaba in October and November. The series is a very instructive one and clearly shows that the birds with a subterminal black band across the outer pairs of tail-feathers, described as *O. meneliki,* are not really separable from typical examples of *O. monachus* with the outer tail-feathers entirely yellow, both forms being found together in the same locality, and every intermediate kind of black marking, from a nearly obsolete bar to a strongly marked one, being found in different examples. The series proves that the various markings of the tail-feathers which are so puzzling are purely individual in character and have nothing to do either with age or with sex. Among three young birds with black bills, traces of yellow on the throat and yellow edges to the greater wing-coverts—all sure signs of immaturity—one has the three outer pairs of tail-feathers entirely yellow, with only a trace of olive at the base of the fourth pair; a second is almost similar, but has a little more olive on the base of the third, fourth and fifth pairs; while a third (the type of *O. meneliki*) has the basal half of the three outer pairs olive, with a subterminal black band on the third, fourth and fifth pairs. Among the adult examples with a red bill, pure black throat and uniform olive greater wing-coverts, the markings on the outer tail-feathers vary in a similar way, some having no trace of a black band and the outer pair pure yellow, while others have a more or less well-developed black band, irrespective of sex. It must, however, be noted that these curious dimorphic conditions do not appear to occur among birds obtained further north. Neither the birds collected by Degen on the Mogre River nor those obtained further north, in central and northern Abyssinia, show more than traces of a black bar on the outer tail-feathers. The black bar seems to be a character developed only in some individuals found in the more southern parts of the range of this highland species. The specimens with the black tail-bar are no doubt somewhat intermediate between the present form and *O. m. permistus*. Count Salvadori correctly pointed out in 1900 that *O. meneliki* was apparently founded on an immature example of *O. monachus*, and after examining the series of specimens from Shoa in the Turin Museum I confirmed his opinion. Subsequently, however, both Dr. Reichenow and Professor Neumann adopted the name *O. meneliki*, supposing it to be applicable to the more southern form found in Jimma and southwards towards Lake Rudolf, but the latter author afterwards discovered (J. f. O. 1905, p. 232) his mistake and named the darker southern form *Oriolus monachus permistus*, which is the name we here use.

O. monachus may be recognised by its golden-olive upper-parts, yellow rump and upper tail-coverts, and by having the outer pair of tail-feathers entirely yellow or nearly so, the terminal yellow portion of the darkest individuals being at least 1½ inches long. The black band across the outer tail-feathers, when present, is much narrower and less complete than in *O. m. permistus* and there is rarely any trace of it on the outermost pair.

The highland form *O. monachus* appears to be a rather larger bird than the more southern *O. m. permistus* as is shown by the following measurements, taken from a large series of specimens.

O. monachus.				*O. m. permistus.*			
10 *Males.*		6 *Females.*		5 *Males.*		7 *Females.*	
Wing.	Tail.	Wing.	Tail.	Wing.	Tail.	Wing.	Tail.
mm.	mm.	mm.	mm.	mm.	mm.	mm.	mm.
136–147	84–91	132–141	89–95	130–140	88–95	130–138	79–85

19. ORIOLUS MONACHUS PERMISTUS.

Oriolus meneliki Neumann (nec Blund. & Lovat), J. f. O. 1903, p. 307.

Oriolus monachus permistus Neumann, Orn. Monatsb. 1904, p. 145 ; id., J. f. O. 1905, p. 233.

The fine series before us shows very clearly the marked differences between this darker southern Oriole and the more northern form mentioned above. Specimens have been examined from Gomma, Jimma, Kaffa, Baku, Kullo, and Kambata, and are easily distinguished from *O. monachus* (even those examples with a marked black band across the tail, such as in the type-specimen of *O. meneliki*) by having the subterminal black band across the four outer pairs of tail-feathers wide and strongly marked and extending over both webs of the outermost pair. The yellow tips contrast very sharply with the black subterminal portion, and are not more than an inch in length ; whereas in the darkest-banded examples of *O. monachus* from the Managasha Forest and from Harrar the yellow terminal portion of the outer pair of tail-feathers is at least 1½ inches in length.

O. m. permistus is more olive above than *O. monachus*, the rump, though yellower than the back, is never bright yellow as in the northern bird, and the black band across the four outer pairs of tail-feathers is always wide and strongly marked even on the outermost pair and is situated much nearer the extremity.

Family PLOCEIDÆ.

20. VIDUA SERENA.

Vidua serena (Linn.) ; Shelley, iv. p. 16 (1905).

A large series of the White-breasted Whydah was procured, the species being found in almost every locality visited between Addis Abbaba and Lake Stefanie.

21. STEGANURA PARADISEA.

Vidua paradisea (Linn.) ; Shelley, iv. p. 25 (1905).

An out-of-plumage male of the Paradise Whydah was shot on the Elgo River, Gamo, on the 2nd of September.

22. COLIUSPASSER EQUES.

Coliuspasser eques (Hartl.) ; Ogilvie-Grant, Trans. Zool. Soc. xix. p. 290 (1910).

Two adult males of Speke's White-winged Whydah were procured, one on the N.E. shore of Lake Rudolf, the other at Gamo. There is also in the collection an immature specimen marked " ♀," which is almost certainly a young male as is shown by the measurement of the tail, 2·0 inches (50·5 mm.); in the female the tail is much shorter.

23. COLIUSPASSER LATICAUDA.

Coliuspasser laticauda (Licht.) ; Shelley, iv. p. 38 (1905) ; Neumann, J. f. O. 1905, p. 347.

The Red-naped Whydah was procured in Kaffa, Kullo, Gofa and Walamo ; all the specimens collected were adult males in full plumage with the exception of one young male in change. There is also an immature female believed to be of this species with the underparts light rufous-buff, brightest on the chest, which is indistinctly streaked with dusky on the sides ; the under wing-coverts are dark sooty-brown and the bastard primary is very short and pointed. Though this specimen differs much from the adult females of *C. laticauda* in the collection, I have no doubt that it has been correctly identified, younger examples of the nearly allied *C. ardens* being very similar.

24. Coliuspasser macrocercus.

Coliuspasser macrocercus (Licht.); Shelley, iv. p. 52 (1905); Neumann, J. f. O. 1905, p. 347.

Lichtenstein's Yellow-shouldered Whydah was met with near Addis Abbaba, on the upper part of the Didessa River, in Gomma, Kaffa, Kullo and Walamo, at elevations varying from 1800 to 6200 feet. The males killed between the 20th of June and the 13th of October are in full plumage; those killed in May are in eclipse, and two males obtained on the 12th and 15th of June are specially interesting, being in moult and showing the change from the eclipse to the full plumage.

25. Urobrachya phœnicea.

Urobrachya phœnicea (Heugl.); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 288 (1910).

A large series of Heuglin's Fan-tailed Whydah, consisting mostly of out-of-plumage birds, was procured near Lake Abbaya in January, and in Jimma in May, while two full plumaged males were killed in Kambata, near Lake Lamina, in September. Immature birds differ from the adults in eclipse in having the lesser wing-coverts blackish, edged with tawny-buff, instead of uniform orange-scarlet. The dark streaks on the chest and sides of the breast seem to vary individually, but are nearly absent in young birds. A specimen from Jimma, with a wing-measurement of 73 mm., is labelled "♀ ?," and is no doubt correctly marked: it appears to be assuming male characters, the black markings on the mantle being very heavy as in the male, while the lesser wing-coverts are largely mixed with orange.

26. Pyromelana flammiceps craspedopterus.

Ploceus craspedopterus Bonap. Consp. Av. i. p. 446 (1850).

Euplectes pyrrhozona Heugl. J. f. O. 1864, p. 247.

Pyromelana flammiceps petiti (Prév. & des Murs); Neumann, J. f. O. 1905, p. 344.

All the adult males procured by Zaphiro differ from typical examples of *P. flammiceps* in having the under tail-coverts white, often with black middles, a difference which has been lost sight of by recent writers.

The name *Loxia* (*Euplectes*) *petiti* Prév. & des Murs [*cf.* Voy. en Abyss. p. 112 (1845–50)], generally regarded as a synonym of *P. flammiceps*, cannot be applied to the present form, for the description is obviously founded partly on *P. flammiceps* and partly on *P. franciscana*, as is shown by the words "l'estomac et les couvertures inférieures de la queue rouge de feu," which can only apply to the latter species. On the other hand, the figure of "Ignicolor de Petit" (Atlas, pl. x. fig. 1) appears to have the under tail-coverts white as in all the specimens procured by Zaphiro, and the bird figured is a fairly accurate representative of them, except that the scarlet lower back and rump are not indicated. The British Museum does not possess any examples of *P. flammiceps* from Abyssinia. Prof. Neumann collected specimens at Madali and Abaï, on the upper Blue Nile, which he referred to *P. f. petiti*, but for the reasons given above, des Murs' name cannot be used, and we have therefore employed the next oldest name, which appears to be *Ploceus craspedopterus* Bonap. [Consp. Av. i. p. 446 (1850)]. Another name given by Heuglin (*cf.* J. f. O. 1864, p. 247) is *Euplectes pyrrhozona*, in which the white under tail-coverts are specially mentioned. He writes: "Von *E. petiti* scheint sich mein Vogel noch durch die weissen Unterschwanzdeckfedern zu unterscheiden."

Zaphiro secured a series of specimens at Didessa, Konta, Kullo, Omo River, Gofa, Uba, Baku, and Gamo. Most of the birds obtained between May and September are in full plumage. But few females of this species were brought home.

27. PYROMELANA FRANCISCANA.

Pyromelana franciscana franciscana (Isert); p. 345, and *P. f. pusilla* Hartert; p. 346, Neumann, J. f. O. 1905.

Pyromelana franciscana Ogilvie-Grant, Trans. Zool. Soc. xix. p. 287 (1910).

The Red-throated Bishop-Bird was met with at Uba, Gamo, Lake Abbaya, and Lake Koya, where a few males, both adult and immature, were procured. Birds from Lake Stefanie have been separated as *P. pusilla* Hartert, on account of their slightly smaller size, but the difference is trifling. Adult males in the small series before me measure 63–64 mm., and immature examples 59–62 mm.

28. PYROMELANA ANSORGEI.

Pyromelana ansorgei Hartert; Ogilvie-Grant, Trans. Zool. Soc. xix. p. 284 (1910).

Coliuspasser dubiosus Neumann, J. f. O. 1905, p. 348.

Adult males of Ansorge's Bishop-Bird were obtained at Kullo in June, and at Gofa in July. Prof. Neumann procured a male specimen at the Akobo River. The adult female appears to be still undescribed, but immature birds were obtained by the Ruwenzori Expedition.

29. PYROMELANA XANTHOMELAS.

Euplectes capensis xanthomelas Rüpp.; Neumann, J. f. O. 1905, p. 346.

Pyromelana xanthomelas Ogilvie-Grant, Trans. Zool. Soc. xix. p. 287 (1910).

Rüppell's Black-and-yellow Bishop-Bird was met with only on the high ground in the neighbourhood of Addis Abbaba, ranging up to 8000 ft. on Mount Yeka. An example from the Managasha Forest marked "♀" has the chest and sides of the breast heavily streaked with blackish and appears to be an immature male.

30. PLOCEIPASSER SUPERCILIOSUS.

Plocepasser superciliosus (Rüpp.); Shelley, iv. p. 333 (1905); Neumann, J. f. O. 1905, p. 336.

An adult pair of the Chestnut-crowned Sparrow-Weaver are included in the present collection. A male from Gofa, 5500 ft., was shot on 25th of June, and a female from the plain of Kucha, 6200 ft., was obtained on the 14th of September.

This is rather a scarce species in collections, and Zaphiro remarked that he had never met with it previously.

Professor Neumann obtained four examples at Gelo and Kucha. The Boyd Alexander collection contains a series from West Africa, and the more southern part of its ranges.

31. PLOCEIPASSER MELANORHYNCHUS.

Plocepasser melanorhynchus Rüpp.; Shelley, iv. p. 328 (1905).

Plocepasser mahali melanorhynchus Neumann, J. f. O. 1905, p. 336.

The Black-billed Sparrow-Weaver was procured at Lake Rudolf, Uba, Lake Koya, and Lake Zwai. I may here remark that Mr. F. C. Selous has recently obtained two egg of this species on the Guaso Nyiro, and has kindly presented them to the British Museum, where they were hitherto unrepresented.

They are of a rather long and regular oval shape, thickly and finely mottled all over the shell with pinkish-brown surface-dots and pale grey undermarkings, the latter being somewhat larger. They measure respectively 23·5 × 17 mm. and 22 × 17 mm.

32. QUELEA ERYTHROPS.

Quelea erythrops (Hartl.); Shelley, iv. p. 117 (1905).

This scarlet-headed Dioch was only met with in Baku, where both male and female were obtained on the 19th–21st July. The occurrence of this bird in southern Abyssinia greatly extends its known range in East Africa, which is given by Reichenow as "Lake Albert to Useguha"; while Shelley says "Zanzibar district, south from the Tana River."

33. QUELEA ÆTHIOPICA.

Quelea æthiopica (Sundev.); Shelley, iv. p. 114 (1905).

Among the series of Diochs procured by Zaphiro at Baku, the Omo River, the north end of Lake Rudolf and Lake Stefanie, Walamo, and in the vicinity of Addis Abbaba, there are but few males in breeding-plumage, most of the specimens being out of plumage or immature. From Baku, Lake Rudolf, and localities at the north end of

Lake Stefanie, typical examples of *Q. æthiopica* were procured with no trace of a black band on the forehead; but at Djaoula, a locality to the north-east of Lake Rudolf, a male of *Quelea quelea* was obtained with a well-marked black forehead, that colour extending over the crown to between the eyes. This specimen has the remainder of the crown and nape buff, tinged with pinkish, whereas in *Q. æthiopica* the crown is pale buff, becoming brownish on the nape.

34. QUELEA QUELEA.

Quelea quelea (Linn.); Shelley, iv. p. 111 (1905).

As remarked above, this western form of Dioch was procured at Djaoula to the north-east of Lake Rudolf.

35. CRYPTOSPIZA SALVADORII.

Cryptospiza salvadorii Reich.; Ogilvie-Grant, Trans. Zool. Soc. xix. p. 296, pl. xi. fig. 3 (1910).

Salvadori's Crimson-wing was fairly plentiful in the Charada Forest, Kaffa, at an elevation of 6000 ft., when Zaphiro visited that locality between the 2nd and 6th of June.

36. SPERMESTES POENSIS.

Spermestes poensis (Fraser): Ogilvie-Grant, Trans. Zool. Soc. xix. p. 290 (1910).

Two males of the Southern Black-and-white Mannikin from Kullo, 5200 ft., were obtained on the 16th of June.

37. SPERMESTES SCUTATUS.

Spermestes scutatus Heugl.; Shelley, iv. p. 170 (1905).

A large series of Heuglin's Bronze Mannikin was collected at the following places:—Gibbe River, Jimma, Gomma, Kullo, Gofa, Baku, and Konso.

38. ORTYGOSPIZA POLYZONA.

Ortygospiza polyzona (Temm.); Shelley, iv. p. 155 (1905).

An adult female of the Many-barred Weaver from the plains to the south of Addis Abbaba is dated 11th of October.

39. AMADINA ALEXANDERI.

Amadina fasciata alexanderi Neumann, Bull. B. O. C. xxiii. p. 43 (1908).

Alexander's Ribbon-Finch was met with at Lake Helene on the 14th of February. It will be remembered that the late Boyd Alexander separated this Abyssinian form from the paler sandy-coloured bird from West Africa, figured in Brown's 'Illustrations of Zoology,' p. 64, pl. fig. 1 (1776); but he unfortunately renamed the latter bird [*cf.* Bull. B. O. C. xix. p. 104 (1907)], a mistake which Professor Neumann subsequently corrected.

40. PYTELIA SOUDANENSIS.

Pytelia soudanensis Sharpe; Shelley, iv. pp. 273, 274 (1905): Ogilvie-Grant, Trans. Zool. Soc. xix. p. 292 (1910).

A male and female of the Sudan Pytelia were procured at the north end of Lake Stefanie in August.

41. PYTELIA AFRA.

Pytelia afra (Gmel.); Shelley, iv. p. 269 (1905).

Two males and a female of the Grey-necked Pytelia were collected in Konso on the 27th of August. One of the males is an immature bird with only a few scarlet feathers on the sides of the head and throat and no orange band on the lower part of the chest.

42. NEISNA QUARTINIA.

Coccopygia quartinea (Bonap.); Shelley, iv. p. 236 (1905).

Neisna dufresneyi quartinia Neumann, J. f. O. 1905, p. 350.

Some examples of this Waxbill, procured by Zaphiro, are much brighter than any of the specimens in the British Museum, having a conspicuous cinnamon-yellow patch on the middle of the breast. It was met with in the Managasha Forest, and to the west at Urguessa and Gamu, in the Charada Forest, Kaffa, and in Kullo.

43. HYPOCHÆRA ULTRAMARINA.

Hypochera ultramarina (Gmel.); Shelley, iv. p. 8 (1905).

The Ultramarine Combasou was met with at Dildila, near Addis Abbaba, and southwards at Uba, Baku, and Baroda.

44. AIDEMOSYNE CANTANS.

Ædemosyne cantans (Gmel.); Ogilvie-Grant & Reid, Ibis, 1901, p. 618.

Uroloncha cantans Shelley, iv. p. 152 (1905).

A female of the African Silver-bill was obtained at Lake Rudolf on the 5th of August. *Ai. orientalis* Lorenz & Hellm. has been discussed in the 'Ibis,' quoted above.

45. LAGONOSTICTA BRUNNEICEPS.

Lagonosticta brunneiceps Sharpe; Ogilvie-Grant, Ibis, 1902, p. 405; Shelley, iv. p. 258 (1905) [part.].

Lagonosticta senegala abayensis Neumann, J. f. O. 1905, p. 349.

The Brown-capped Fire-Finch was found in the neighbourhood of Addis Abbaba, at the Akaki River in October and at Holata in November.

46. LAGONOSTICTA LARVATA.

Lagonosticta larvata (Rüpp.); Ogilvie-Grant, Ibis, 1900, p. 127.

Estrilda larvata Shelley, iv. p. 225 (1905); Neumann, J. f. O. 1905, p. 348.

An adult male in moult of Rüppell's Black-throated Waxbill was procured at Garoka in Bunno on May 7. Neumann obtained an adult male at Kucha. It is probably one of the rarest Waxbills, and is very seldom received in collections. Lord Lovat obtained a somewhat immature male at Gelongol, S. Abyssinia, hitherto the only specimen in the Natural History Museum.

47. LAGONOSTICTA RHODOPAREIA.

Lagonosticta rhodoparia Heugl.; Shelley, iv. p. 250, pl. xxxiv. fig. 1 (1905); Ogilvie-Grant, Ibis, 1908, p. 272; id., Trans. Zool. Soc. xix. p. 302 (1910).

A male was shot at Gomma on the 11th of May.

48. ESTRILDA BENGALIS.

Estrilda bengalis Linn.; Ogilvie-Grant, Ibis, 1907, p. 584.

The Ruby-cheeked Cordon-bleu was procured at Gomma, Gofa, Baku, Uba, Lake Stefanie, and Konso.

49. ESTRILDA PEASEI.

Estrilda peasei Shelley, Bull. B. O. C. xiii. p. 74 (1903); Ogilvie-Grant, Ibis, 1907, p. 584.

Pease's Waxbill was met with in the Managasha Forest, on Mergeta Mountain, at Nono, in the Charada Forest in Kaffa, and in Kullo at altitudes varying from 3600 to 6800 ft. It is easily distinguished from *E. minor* by having the rose flush continued up to the white throat and the middle of the chest devoid of bars. After separating this form Shelley subsequently united it with *E. occidentalis* Fraser & Jardine, which is a very different bird with the white chest merely tinged with rose and the patch round the eye orange-scarlet instead of crimson-scarlet.

50. ESTRILDA CHARMOSYNA.

Estrilda charmosyna (Reich.); Shelley, iv. p. 232 (1905), *Estrilda nigrimentum* Salvad.; Ogilvie-Grant & Reid, Ibis, 1901, p. 619.

Shelley was no doubt right in regarding the above names as synonymous. The type of *E. charmosyna* was obtained at Berbera, and I have examined specimens in the British Museum procured by Mr. R. M. Hawker at Hargeisa and Jifa Medir, which lie just to the south, and from the Goolis Mts., collected by G. W. Bury; the type of *E. nigrimentum* was described by Salvadori from Shoa and I have examined birds from Tadejemulka and Owaramulka, both in Shoa, which do not differ from specimens from Berbera.

The present collection includes a male from Lake Zwai and a female from Lake Rudolf. The Black-faced Waxbill appears to be a rare bird and is seldom procured.

51. SPORÆGINTHUS OCHROGASTER.

Estrilda ochrogaster Salvad.; Shelley, iv. p. 217 (1905); Erlanger, J. f. O. 1907, p. 21.

Sporæginthus margaritæ Blundell & Lovat; Ogilvie-Grant, Ibis, 1900, p. 130, pl. iii. fig. 1.

Sporæginthus ochrogaster Ogilvie-Grant, Ibis, 1907, p. 583.

Two males and a female of the Buff-breasted Waxbill were procured at Gofa on the 30th of June.

This appears to be the most southerly locality for the species yet recorded. Zaphiro had previously met with it on the Baro River, and Erlanger found it at the Mukki River, in the Lake District. Though Lord Lovat met with a flock of close on a hundred at Gelongol, near the Didessa River, this species appears to be both rare and local, and is seldom procured. Professor Neumann did not meet with it.

52. GRANATINA IANTHINOGASTER.

Uræginthus ianthinogaster Reich.; Shelley, iv. p. 181 (1905).

The Purple-bellied Amaduvade was met with to the north of Lakes Rudolf and Stefanie in August. None of the specimens obtained are in full plumage.

53. TEXTOR INTERMEDIUS.

Textor intermedius Cab.; Shelley, iv. p. 317 (1905).

Adult and immature examples of Cabanis's Buffalo-Weaver were met with at Lake Zwai and northwards to Bourka, Arussi. I entirely agree with Shelley who has united *T. scioanus* Salvad. with the present species.

54. DINEMELLIA DINEMELLI.

Dinemellia dinemelli (Rüpp.); Ogilvie-Grant & Reid, Ibis, 1901, p. 623; Shelley, iv. p. 311 (1905).

A male and female of Dinemell's Weaver were procured at Lake Zwai in November and December.

55. ANAPLECTES MELANOTIS.

Anaplectes melanotis (Lafr.); Shelley, iv. p. 338 (1905).

The Red-winged Anaplectes was found at Guma, Kullo, Gofa, the north-east of Lake Rudolf, and Gamo. The series includes an immature male and female. Both these specimens have the outer webs of the primary and secondary quills orange, instead of scarlet. In the male the crown of the head is brown interspersed with a few scarlet feathers, while in the female that part is dull olive-green.

ANOMALOSPIZA IMBERBIS (Cab.).

Great confusion has taken place with regard to this species. In the 'Catalogue of the Birds in the British Museum,' xii. p. 355, Sharpe gave a list of seven specimens, which he referred to *Serinus imberbis* Cabanis, but they have nothing to do with that species and are partly referable to *S. marshalli* Shelley and partly to *S. shelleyi* Neumann, if the latter is kept distinct from *S. sharpei* Neumann. Shelley (Birds of Africa, iii. p. 203) made much the same mistake, his *Serinus imberbis* being synonymous with *S. sharpei.* The species of the genus *Anomalospiza* closely resemble in general appearance those of *Serinus,* but possess a very small bastard primary, as in *Pyromelana flammiceps* and other species of Weavers; the shape of the culmen is also very remarkable, and this character alone should serve to distinguish at a glance the members of the genus *Anomalospiza.* Though widely distributed, *A. imberbis* (Cab.) is probably a rare bird, and is very seldom procured. The only example in the British Museum, in spite of what has been written to the contrary, is a male from Sierra Leone obtained by Mr. Robin Kemp. This specimen appears to agree entirely with the description and figure of the type-specimen from Zanzibar [*cf.* Van der Decken's Reisen in Ost-Afrika, iii. pt. i. p. 30, pl. ix (1869)]: also with the type-specimens of *Crithagra rendalli* Tristram from Barberton.

Zaphiro was fortunate enough to obtain an adult male and female of a second species of this remarkable genus, which has been named :—

56. ANOMALOSPIZA MACMILLANI.

Anomalospiza macmillani Bannerman, Bull. B. O. C. xxix. p. 37 (1911).

The adult male of this remarkable bird differs from the male of *A. imberbis* Cab., in having the general colour of the plumage duller; the crown of a more orange-yellow; the back less strongly streaked with black; and the chest, breast, sides, and flanks washed with olive, giving these parts a more dusky appearance. Iris brownish-black. Wing 72 mm., tail 42.

The adult female is similar to the female of *A. imberbis*, but is without distinct dark shaft-streaks on the feathers of the chest, while those on the sides and flanks are much narrower and confined more or less to the shaft. Wing 64 mm.

The type of the male was procured in Jimma, at an altitude of 5000 feet, on the 21st of May, and of the female on the 8th of May at an altitude of 2000 feet.

57. Heterhyphantes baglafecht.

Othyphantes baglafecht (Vieill.); Shelley, iv. p. 454 (1905).

Othyphantes lovati Shelley, t. c. p. 457.

Ploceus baglafecht Vieill.; Neumann, J. f. O. 1905, p. 337.

Examples of the Baglafecht Weaver were obtained in the neighbourhood of Addis Abbaba, in Guma, Jimma, Kaffa, Kullo and Gofa, between the months of May and October. In addition to these, the British Museum possesses specimens from Abyssinia killed at other seasons.

The large series now available for comparison, shot in almost every month of the year, has enabled me to prove that the *O. lovati*, separated by Shelley from *H. baglafecht* on account of its uniform green back and rump, is nothing more or less than the adult male of that species in nearly full breeding-plumage. Both males and females are generally in winter-plumage from November to January, and sometimes later, and are then perfectly similar to one another as described by Shelley. Some individuals, however, begin to put on breeding-plumage much earlier than others—and we find examples killed at Antoto in January which have already assumed the full breeding-plumage, except on parts of the back. Some individuals do not complete the olive breeding-plumage on the lower back and rump, and in others these parts remain in the light ash-brown winter-plumage with perhaps here and there an olive feather. Individuals vary greatly in this respect, and I have before me specimens killed at Antoto in the end of September with the entire back and rump olive-green or with the upper back green and the lower back pale ash-brown. The amount of yellow on the underparts is also an extremely variable character, every male has the throat, chest, and breast bright yellow in breeding-plumage and in some individuals the belly, flanks, and thighs are of the same yellow colour, while in others the middle of the belly is whitish and the flanks, thighs, and under tail-coverts retain their pale ashy-brown winter-plumage, with here and there a yellow feather interspersed.

It is probable that the specimens with the entire upperparts olive and the entire underparts yellow, that is to say, birds in the most complete breeding-plumage, are the oldest examples. The female assumes a breeding-plumage like the male and varies in just the same manner, both above and below, but has the entire crown olive-green, like the back, instead of golden-orange, as in the male.

The young birds are easily distinguished from the adults in winter-plumage by having the feathers round the eye and on the lores, cheeks, and ear-coverts brownish-white instead of black; moreover, the chin is rusty white instead of yellow.

58. HETERHYPHANTES MELANOXANTHUS.

Heterhyphantes melanoxanthus (Cab.); Shelley, iv. p. 383 (1905).

Ploceus nigricollis malensis Neumann, J. f. O. 1905, p. 338.

Heterhyphantes malensis Shelley, iv. p. 384 (1905).

Mr. McMillan's collection contains adult males procured at the northern ends of Lakes Rudolf and Stefanie, where Professor Neumann also met with the types of his *P. n. malensis.* Our male examples show that the black stripe is continued behind the eye just as in typical examples of *H. melanoxanthus* from East Africa (Mombasa).

This species is quite distinct from *H. nigricollis*, of which Professor Neumann considers it a subspecies, having the occiput, back, and tail deep black, while in the latter the occiput is golden-orange like the crown, the back is greenish black and the rump and tail olive or brownish-olive.

59. Hyphantornis rubiginosus.

Hyphantornis rubiginosus (Rüpp.); Shelley, iv. p. 432 (1905).

Ploceus rubiginosus Erlanger, J. f. O. 1907, p. 7.

Rüppell's Chestnut Weaver was recorded from Konta, Sagan River, Konso, Lake Bakate (= L. Ganjule), Gardulla, and Baroda.

Males, both adult and immature, were shot between the 20th and 30th of August in Konso, the adults being in full plumage, while the young males resemble the females; one specimen, however, is moulting in chestnut feathers on the middle of the breast. The series is a very instructive one and a welcome addition to the National collection.

60. Hyphantornis abyssinicus.

Ploceus cucullatus abyssinicus (Gmel.); Neumann, J. f. O. 1905, p. 340.

A considerable series of the Abyssinian Weaver was procured at Lake Koya, Lake Abbaya, Arussi, Jimma, Guma, Gofa, Lake Rudolf, Konso, and Gamo between the months of January and September. The birds killed between December and February are out of plumage: males in full breeding-dress were obtained between June and September. It should be noted that these latter differ quite appreciably from the males of *H. abyssinicus* from the highlands of Abyssinia, about Lake Tsana, as well as from those from British East Africa, in having the underparts uniform bright yellow, washed with orange on the chest, while they lack the rich rufous-buff or almost chestnut tinge which characterises almost all the males from the above-mentioned localities. There are, however, one or two intermediate specimens from Eldoma, British East Africa, which make me hesitate to separate the southern Abyssinian specimens collected by Zaphiro. The females do not differ from those of typical *H. abyssinicus*, having the throat only yellow. In *H. feminina* O.-Grant, from Uganda and Ruwenzori, the female has the whole of the underparts yellow.

61. HYPHANTORNIS INTERMEDIUS.

Hyphantornis intermedius (Rüpp.); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 276 (1910).

Specimens of the Intermediate Masked-Weaver differ in no way from those described in the Report on the Ruwenzori Expedition, quoted above. Full-plumaged males were procured on the Omo, at the northern end of Lake Stefanie, on the Sagan River and at Lake Abbaya, in August and September.

62. HYPHANTORNIS VITELLINUS.

Hyphantornis vitellinus (Licht.); Shelley, iv. p. 442 (1905).

Ploceus vitellinus vitellinus Neumann, J. f. O. 1905, p. 341.

Full-plumaged males of the Vitelline Masked-Weaver were obtained at Gofa, at the northern ends of Lakes Rudolf and Stefanie, and in Konso.

63. HYPHANTORNIS SPEKEI.

Hyphantornis spekei Heugl.; Shelley, iv. p. 414, pl. xl. fig. 2 (1905).

An adult male of Speke's Weaver-Finch was shot on the Akaki River near Addis Abbaba on the 3rd of October.

64. HYPHANTORNIS TÆNIOPTERUS.

Hyphantornis tæniopterus (Reichenb.); Shelley, iv. p. 411 (1905).

Ploceus taeniopterus Neumann, J. f. O. 1905, p. 341.

Three full-plumaged males of Reichenbach's Masked-Weaver were obtained on the Omo River between the 1st and 3rd of August.

65. HYPHANTORNIS GALBULA.

Xanthophilus galbula (Rüpp.); Shelley, iv. p. 174 (1905).

A small series of Rüppell's Golden Weaver was obtained in the neighbourhood of Lakes Zwai, Abbaya and Stefanie. Full-plumaged males were killed towards the end of January, likewise examples only commencing to assume the breeding-dress. Immature birds of both sexes were collected in August and September and an adult female in December.

66. Sitagra ocularia abayensis.

Ploceus ocularius abayensis Neumann, J. f. O. 1905, p. 339.

Sitagra ocularia (Smith); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 280 (1910).

The series of this Spectacled Weaver procured in southern Abyssinia includes only three adult male examples and it is difficult to judge from these specimens as to the value of the characters ascribed to this subspecies by Professor Neumann. One male only has the hinder-part of the crown in full plumage and in that specimen the golden forehead does not extend over the head much beyond the eyes, the hinder-part being golden-olive. The difference between this specimen and typical *S. ocularia* is slight, but if constant may justify the separation of the southern Abyssinian bird. As regards *Ploceus ocularius suahelicus*, Neumann (J. f. O. 1905, p. 339), which is said to range in East Africa from the Zambesi and Mozambique to Mombasa and Lamu, I can see no reason for separating these birds from typical *S. ocularia*, in which I also include *P. crocatus* Hartlaub, as has already been explained in the Report on the Ruwenzori Expedition quoted above.

Zaphiro procured specimens at Lake Zwai, Arussi, Jimma and Kullo between January and June.

67. Sitagra luteola.

Sitagra luteola (Licht.); Shelley, iv. p. 397 (1905); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 281 (1910).

Ploceus luteolus Neumann, J. f. O. 1905, p. 341.

Examples of Lichtenstein's Weaver were collected at the River Mukki (west of Addis Abbaba), Lake Zwai, Arussi, Uba, at the north end of Lake Rudolf and in Gamo. Full-plumaged males were procured in July, August and September, and an adult male beginning to assume breeding-plumage in January, while a younger male, apparently assuming breeding-dress for the first time, was killed in September.

68. Amblyospiza melanota.

Amblyospiza melanota (Heugl.); Shelley, iv. p. 307 (1905).

Amblyospiza albifrons æthiopica Neumann, J. f. O. 1905, p. 342.

Two adult males of Heuglin's Grosbeak-Weaver were obtained in Kullo on the 16th of June and in Baku on the 19th of July respectively. These are no doubt typical examples of *A. a. æthiopica* Neumann, and do not appear to differ in any way from the specimens collected on the lower slopes of Ruwenzori and in Uganda.

Family Fringillidæ.

69. Spinus citrinelloides.

Chrysomitris citrinelloides (Rüpp.); Ogilvie-Grant, Ibis, 1900, p. 134; id. & Reid, Ibis, 1901, p. 624.

Spinus citrinelloides citrinelloides Neumann, J. f. O. 1905, p. 354.

A fine series of the Abyssinian Citril Finch was procured in the neighbourhood of Addis Abbaba, also in Jimma, Kaffa, Kullo and Gofa.

The young male in the first autumn-plumage has the dark mask on the face greyish-black (not deep black as in the adult), the breast is washed with olive, and both the back and breast are more heavily streaked with blackish, as in the female.

Professor Neumann has recognised no fewer that four forms of *S. citrinelloides* as occurring between Abyssinia and Lake Nyasa, viz :—

1. *Spinus citrinelloides citrinelloides* Rüpp. From Shoa eastwards to Harrar and southwards to Lake Ganjule.
2. *S. c. kikuyensis* Neumann. From Lake Naivasha to Kikuyu and Kenia.
3. *S. c. frontalis* Reichenow. Lake Kivu to Victoria Nyanza and the Equatorial Province.
4. *S. c. hypostictus* Reichenow. Kilimanjaro to Lake Nyasa.

I agree with Professor Neumann that when fully adult males are compared, the Abyssinian bird may be readily recognized from those found in British East Africa and southwards by the more yellowish-green colour of the upperparts which are less heavily streaked with blackish. I cannot, however, distinguish between the other subspecies which he admits and think they should all three be united under the name *S. c. hypostictus*, ranging from Lake Naivasha through the Lake District to Nyasa.

70. Spinus nigriceps.

Chrysomitris nigriceps (Rüpp.); Ogilvie-Grant, Ibis, 1904, p. 260.

Spinus nigriceps Neumann, J. f. O. 1905, p. 354.

A small series of the Black-headed Siskin, a semi-alpine bird, was procured in the neighbourhood of Addis Abbaba at an elevation of about 9000 ft., but it was not met with elsewhere.

71. Petronia dentata.

Petronia dentata (Sundev.); Shelley, iii. p. 261 (1902).

There is an immature male of a Rock-Sparrow in the collection, obtained in Arussi on the 2nd of February, which appears to belong to this species, but the wing-measurement is rather large, 82 mm. As Shelley has already hinted, it seems possible that it is the male only in this species which has the crown grey, and the eyebrow-stripe dull chestnut; but there are two specimens from Abyssinia collected by Blanford which show these characters and are marked as females.

72. Petronia pyrgita.

Petronia pyrgita (Heugl.); Shelley, iii. p. 263 (1902).

A female of Heuglin's Rock-Sparrow procured at the Dalbana River, Konso, on the 24th of August appears to be immature. It has the upperparts rather darker than in the adult and lacks the yellow spot on the throat.

73. Poliospiza tristriata.

Poliospiza tristriata Rüpp.: Shelley, iii. p. 229 (1902).

Examples of Rüppell's Seed-eater were obtained in the Managasha Forest, at Antoto and further south in Kullo. All belong to the typical Abyssinian form with the darker breast and belly and not to *P. t. pallidior* Lort Phillips, from the Wagga Mountains.

In Sir F. J. Jackson's collection there are two adult male examples of a species of *Poliospiza* obtained at Mangiki, Mount Elgon, 6000 ft, in June and August, 1900. These specimens have been identified as *P. tristriata*, but are really very distinct and have a much longer wing.

The most closely allied form appears to be *P. leucoptera* from South Africa, which has the same double band across the wing, formed by the whitish tips of the median and greater coverts; but in that species the bill is much stouter, and the wing is much shorter.

I have therefore described the bird from Mount Elgon as:—

POLIOSPIZA ELGONENSIS.

Poliospiza elgonensis Ogilvie-Grant, Bull. B. O. C. xxxi. p. 17 (1912).

Adult male. General colour above earthy-brown, superciliary stripes white and extending to the occiput; feathers of the crown edged with white, giving these parts a distinctly streaked appearance; lores, cheeks, ear-coverts, and sides of the throat dark earthy-brown: median and greater wing-coverts and outer margins of the quills, especially the innermost secondaries, whitish, the light tips of the wing-coverts forming two bars across the wing; chin and middle of the throat whitish, with a few faint streaks of brownish; breast and sides of the body pale brown, indistinctly mottled with whitish, belly and under tail-coverts whitish. Wing 82–85 mm. (3·2–3·35 inches); tail 57–58 mm.

The present species resembles *P. reichardi* Reich., in the coloration of the upperparts, but the breast and sides are not streaked. It seems quite certain that *P. elgonensis* is not the fully adult of *P. reichardi* for the latter has been found breeding in its striped plumage.

Hab. Mount Elgon, 6000 ft.

Type in the British Museum: ♂. Mangiki, 14. vi. 00. Presented by Sir Frederick J. Jackson.

74. POLIOSPIZA REICHARDI.

Poliospiza reichardi Reich.; Shelley, iii. p. 229, pl. xxvi. fig. 2 (1902); Erlanger, J. f. O. 1907, p. 28, pl. i. fig. 3.

The occurrence of Reichard's Seed-eater in Kullo extends its known range a long way to the north: a female was procured at Dissa on the 22nd of June. Hitherto it had been known to range from Nyasaland to the Kamassia Hills, British East Africa, which lie just north of the Equator.

Dr. Reichenow described what he believed to be a nearly allied form from Arussi, as *Poliospiza erlangeri* [*cf.* Erlanger, J. f. O. 1907, p. 28, pl. i. figs. 2*a* & 2*b*]. After examining these figures, which show a much straighter culmen, a strongly marked white eyebrow-stripe, and regularly streaked throat and breast, I am inclined to believe that the species has been founded on immature examples of *P. pallidior* Lort Phillips, which is a subspecies of *P. tristriata*. Immature examples of the latter agree in every particular with Dr. Reichenow's description of *P. erlangeri*. Above will be found the description of a nearly allied form met with by Sir Frederick Jackson on Mount Elgon, and which has hitherto been wrongly referred to *P. tristriata*.

75. SERINUS FLAVIVERTEX.

Serinus flavivertex (Blanf.): Neumann, J. f. O. 1905, p. 354.

Blanford's Seed-eater is a rare and local species. Most of the specimens in the present collection were procured in the Managasha Forest, but it was also met with in Gofa.

76. SERINUS MACULICOLLIS.

Serinus maculicollis Sharpe; Ogilvie-Grant & Reid, Ibis, 1901, p. 625.

Shelley [Birds Afr. iii. p. 191 (1902)] has united the present species with *S. dorsostriatus* Reich., from Victoria Nyanza; but the latter bird is easily distinguished by having the belly and under tail-coverts golden-yellow, like the breast, in the fully adult male. The present species has been met with by Sir Frederick Jackson in the Guaso Nyiro district and at Elgeyu in the Kamassia Mountains, also by Mr. A. B. Percival at Kauro. A pair were collected by Zaphiro at Metti, to the north of Lake Stefanie.

77. SERINUS ICTERUS BARBATUS.

Serinus icterus (Bonn.); Ogilvie-Grant, Ibis, 1900, p. 135.
Serinus icterus barbatus Neumann, J. f. O. 1905, p. 354.

I am not quite satisfied about the identification of the birds procured by Zaphiro at Guma, Gofa, and Djaoula, to the east of Lake Rudolf.

The bill is rather thicker and heavier than in *S. icterus*, and all the specimens lack the light yellow edges to the median and greater wing-coverts, which in most examples of *S. icterus* and *S. i. barbatus*, both old and young, form a conspicuous double bar across the wing. It must, however, be remarked that one of the four adult males killed on the 9th of July at Gofa shows traces of yellowish edges to the coverts, and new yellow-tipped feathers are moulting in.

78. SERINUS XANTHOPYGIUS.

Serinus xanthopygius Rüpp.; Ogilvie-Grant, Ibis, 1900, p. 136; Shelley, iii. p. 220 (1902).

A single example of Rüppell's Yellow-rumped Canary was procured at Djaoula, in Gofa, at an altitude of 8200 ft. It is a rare bird in collections, though Heuglin says that it is to be met with in pairs and flocks on the stony districts of the Abyssinian highlands. Lord Lovat obtained a specimen at Gerru, to the north of Addis Abbaba; and, according to Hartlaub, specimens procured by Emin at Ugogo are referable to this species, in which case its range extends a long way to the south.

79. SERINUS REICHENOWI.

Serinus reichenowi Salvad.; Shelley, iii. p. 219 (1902).

Reichenow's Canary was met with at Baku, Mircha, at the north end of Lakes Rudolf and Stefanie, Gamo, Walamo, Lakes Koya and Helene, and Bourka in Arussi. Zaphiro appears to have found it rather a common species and Sir A. E. Pease found it numerous at Kora, to the north of Lake Zwai, but Professor Neumann does not record it.

80. Serinus striolatus.

Serinus striolatus (Rüpp.): Ogilvie-Grant, Ibis, 1904, p. 260.

Poliospiza striolata Neumann, J. f. O. 1905, p. 353.

The Streaked Seed-eater was met with in the neighbourhood of Addis Abbaba, in Kaffa, Kullo, Gofa, and Walamo. The southern form from Ruwenzori and the Mufumbiro Volcanoes has recently been separated under the name *S. s. graueri* Hartert. Birds in May, June and July are in freshly moulted plumage, while those collected in October and November are much worn. Some specimens have the chin and upper part of the throat very distinctly washed with yellow; this is especially the case in a male from Managasha killed in October and a female from Jimma in May. The yellow wash is often more or less present and appears to be most pronounced in the oldest examples.

81. Emberiza poliopleura.

Emberiza poliopleura (Salvad.): Shelley, iii. p. 149. pl. xxiii. fig. 1 (1902).

The Somali Golden-breasted Bunting was only found at the north end of Lake Rudolf and in the country to the north of Lake Stefanie, about the Sagan River. Professor Neumann does not seem to have met with it. Two apparently immature birds marked female have the crown blackish chestnut, and the stripe down the middle pale rusty red: the fully adult female does not seem to differ from the adult male, for in the most mature specimen the crown is black and the median stripe white.

82. Emberiza affinis.

Emberiza affinis Heugl.; Shelley, iii. p. 148 (1902).

Emberiza affinis omoënsis Neumann, J. f. O. 1905, p. 358.

Three examples of Swainson's Golden-breasted Bunting were procured in Jimma, Kaffa and Walamo respectively: they do not differ in any way from a typical example of *E. forbesi* Hartl. from the Upper White Nile (= *E. affinis* Heugl.) and I do not therefore recognise *E. a. omoënsis* Neumann, which appears to me to be a pure synonym. This

Bunting is a very rare species in collections and was only represented in the British Museum by a single specimen.

83. EMBERIZA HORTULANA.

Emberiza hortulana Linn.; Shelley, iii. p. 154 (1902).

The Ortolan was met with only in the neighbourhood of Addis Abbaba in the months of October and November. Both adult and immature birds are included in the series obtained.

84. FRINGILLARIA TAHAPISI.

Fringillaria tahapisi (Smith); Shelley, iii. p. 164 (1902).

This Rock-Bunting ranges over the greater part of tropical Africa, extending from the Cape to Shoa on the east and on the west to Gaboon. Zaphiro met with it at Addis Abbaba, Gofa, Baku, Konso, Baroda and Arussi.

Family ALAUDIDÆ.

85. TEPHROCORYS RUFICEPS.

Tephrocorys ruficeps (Rüpp.); Shelley, iii. p. 126 (1902).

Calandrella ruficeps Reichenow, iii. p. 379 (1909).

Tephrocorys cinerea ruficeps Neumann, J. f. O. 1906, p. 238.

The Abyssinian Red-capped Lark was only met with to the south of Addis Abbaba and at the Akaki River between the 11th and 13th of October. In the males the wing measures 92–94 mm.; in the females 84–88 mm. The females are distinctly smaller than the males and the black spots on the top of the head are not confined to the occiput, but extend forward over the crown to the forehead; in the adult male these parts are uniform chestnut.

86. MIRAFRA DEGENI.

Mirafra degeni Ogilvie-Grant, Ibis, 1904, p. 261, pl. v.

Mirafra fischeri Reichenow, iii. p. 339 (1904) [part.]

Examples of Degen's Lark from Uba, Baroda and Walamo agree perfectly with the typical specimens from Liben and with another from Kora, to the south of Addis Abbaba.

Dr. Reichenow, in his 'Vögel Afrikas' has united both

M. degeni and *M. zombæ* with *M. fischeri*, but if he had ever examined specimens of the two first named, he would have doubtless recognised their very distinctive characters. [*Cf.* Trans. Zool. Soc. xix. p. 310 (1910).]

87. MIRAFRA CANTILLANS.

Mirafra cantillans Blyth; Shelley, iii. p. 64 (1902).

An immature example of the Singing Bush-Lark was procured in Baroda, at 5000 feet, on the 12th of September. This appears to be a rare species in north-east Africa. It had previously been obtained by Mr. Hawker at Ujawaji, in Somaliland, and by Sir Alfred Pease at Filwa, east of Addis Abbaba; the present record carries its known range about two hundred miles further south.

88. MIRAFRA PŒCILOSTERNA.

Mirafra pœcilosterna (Reichenow); Reichenow, iii. p. 331 (1904).

This Sabota Lark was met with about the north end of Lake Stefanie and on the Sagan River, 2000–2800 feet, in August. The specimens all agree perfectly with typical examples procured on the Tana River by Mr. Gilbert Blaine; also with specimens from the Guaso Nyiro collected by Mr. A. B. Percival and with others from the same locality in Sir F. J. Jackson's collection.

Two birds in the latter collection from Kikuyu and the Athi River have the upper parts much darker, and the markings on the chest and the flanks deeper rufous than in typical *M. pœcilosterna*. They agree fairly well with the figure given by Shelley and apparently taken from a specimen collected by Abbott east of Kilimanjaro, but the general colour of the rufous portions of the plumage is of too rusty a red.

I propose to separate this bird subspecifically under the name

MIRAFRA PŒCILOSTERNA JACKSONI, subsp. n.

Mirafra pœcilosterna Shelley, iii. p. 40, pl. xvi. fig. 1 (1902) [part.].

In two adult specimens, one of which is said to have been a male, the wing measurements are 84 mm. and 92 mm. respectively.

Type in the British Museum: adult. Kikuyu, 5500 ft., 8. viii. 04. Presented by Sir Frederick J. Jackson.

89. GALERIDA PRÆTERMISSA.

Galerita prætermissa (Blanf.); Shelley, iii. p. 112 (1902).

Galerida theclæ prætermissa Neumann, J. f. O. 1906, p. 238.

The Dark-crested Lark was obtained in the neighbourhood of Addis Abbaba between September and November. Two quite young birds were met with on the 1st and 3rd of November; they have the feathers bordering the crown, as well as the back, and wing-coverts blackish margined with light rufous and with a buff spot at the extremity. The wing varies in males from 99 to 102 mm.; and in females from 95 to 97 mm.

Family MOTACILLIDÆ.

90. ANTHUS TRIVIALIS.

Anthus trivialis (Linn.); Shelley, ii. p. 299 (1900): Neumann, J. f. O. 1906, p. 230.

Examples of the Tree-Pipit were collected at Holata and Addis Alam in November, at Arussi in February, and at Baroda in September.

91. ANTHUS LEUCOPHRYS SORDIDUS.

Anthus leucophrys sordidus Rüpp.; Neumann, J. f. O. 1906, p. 234.

Anthus leucophrys omoënsis Neumann, *t. c.* p. 234.

The series of specimens collected by Zaphiro in the neighbourhood of Addis Abbaba, Didessa, Kaffa, Gofa, Uba, Konso, Lake Abbaya, Walamo, Kambata and Arussi clearly all belong to one form and are no doubt referable to typical *A. sordidus* Rüpp. Professor Neumann has recognised a number of subspecies and has separated the birds from the Omo River district as *Anthus leucophrys omoënsis*, while those from Harar district have been distinguished by him as *A. l. saphiroi*. This latter appears to be a fairly recognisable paler race, but I must confess my inability to distinguish between the birds from the Omo River and typical *A. sordidus*, all having the upperparts equally dark, though specimens in worn plumage are of course always much darker than freshly moulted examples, which still retain the greyish-brown edges to the feathers of the back.

As has already been pointed out by Dr. Reichenow [Vög. Afr. iii. p. 328 (1905)] *Anthus leucophrys* (Vieill.) [N. Dict. d'Hist. Nat. xxvi. p. 502 (1818)] must be used for the Cape Plain-backed Pipit instead of *Alauda pyrrhonotha* Vieill. [N. Dict. d'Hist. Nat. i. p. 361 (1816)], the name used by Sharpe [Cat. Birds B. M. x. p. 555 (1885)]. The latter name, *Alauda pyrrhonotha*, was founded on 'l'Alouette à dos roux' [Levaill., Ois. d'Afr. iv. p. 134, pl. 197 (1805)]. Both the figure and description of the latter unquestionably refer to the Lark at present known as *Heterocorys breviunguis* Sundev., *cf.* Sharpe, Shelley, and other authors. This matter was evidently investigated years ago by G. R. Gray, who in Hand-l. ii. p. 123 (1870) correctly placed *A. pyrrhonotha* as a species of Lark in the genus *Megalophonus*, and the two specimens catalogued by Sharpe under *H. breviunguis* "*a*, *b*. ad. sk. Interior of Cape Colony. Sir A. Smith [C.]" had previously been named "*Alauda pyrrhonotha*" by G. R. Gray, when they formed part of the mounted collection at the British Museum.

92. ANTHUS CAMPESTRIS.

Anthus campestris (Linn.); Shelley, ii. p. 317 (1900); Reich. iii. p. 319 (1904).

Two examples of the Tawny Pipit were shot at Addis Abbaba on the 18th of October.

93. ANTHUS RUFULUS CINNAMOMEUS.

Anthus rufulus Vieill.; Shelley, ii. p. 319 (1900).

Anthus rufulus cinnamomeus Rüpp.; Reich. iii. p. 313 (1904); Neumann, J. f. O. 1906, p. 231.

Anthus cinnamomeus Ogilvie-Grant, Ibis, 1907, p. 587.

The Rufous Pipit was met with near Addis Abbaba, at Lake Zwai, Kambata, Lake Abbaya, Kulio and Jimma. Specimens in moult were obtained in May and September.

94. ANTHUS CERVINUS.

Anthus cervinus (Pall.); Shelley, ii. p. 325 (1900); Neumann, J. f. O. 1906, p. 230; Ogilvie-Grant, Ibis, 1907, p. 587.

A male example of the Red-throated Pipit was killed at Lake Zwai on the 21st of December.

95. MACRONYX FLAVICOLLIS.

Macronyx flavicollis Rüpp.; Shelley, iii. p. 11 (1902); Neumann. J. f. O. 1906, p. 237.

A large series of the Abyssinian Yellow-throated Pipit was procured between April and October, near Addis Abbaba, at the Akaki River, near Addis Alum, the Gibbe River, Jimma, Kaffa, Kullo, Gofa, Walamo and Kambata, at elevations varying from about 4000–11,000 feet. Blanford states that in northern Abyssinia it was never observed by him below 10,000 feet.

Immature examples killed at Kullo in June, and at Addis Abbaba in October have the anterior half of the superciliary stripe and throat pale buff like the rest of the underparts, the chest spotted with blackish, and the middle of the belly yellowish; the upperparts, wings, and tail are like those of the adult.

96. MOTACILLA ALBA.

Motacilla alba Linn.; Shelley, ii. p. 272 (1900).

Motacilla alba dukhunensis Sykes; Neumann, J. f. O. 1906, p. 229.

An example of the White Wagtail was procured on an island in Lake Zwai on the 29th of December. This specimen has the wing-coverts blackish edged with white, and is no doubt of European origin.

97. MOTACILLA LONGICAUDA.

Motacilla longicauda Rüpp.; Shelley, ii. p. 274 (1900); Neumann, J. f. O. 1906, p. 229.

The Long-tailed Pied Wagtail was met with in the neighbourhood of Addis Abbaba in September and October, and in Kaffa, Konta and Kullo in June.

98. Motacilla boarula.

Motacilla melanope Pall.; Shelley, ii. p. 282 (1900).

Motacilla boarula Linn.; Neumann, J. f. O. 1906, p. 230.

Two male examples of the Grey Wagtail were taken at Addis Abbaba on the 18th of October.

99. Motacilla flava.

Motacilla flava Linn.; Shelley, ii. p. 286 (1900).

Budytes flavus Neumann, J. f. O. 1906, p. 230.

The Blue-headed Wagtail was met with near Addis Abbaba, round Lake Zwai, and at Walamo, 6000 ft., between September and January.

Family Nectariniidæ.

100. Nectarinia metallica.

Hedydipna metallica (Licht.); Shelley, ii. p. 15 (1900).

Nectarinia metallica Ogilvie-Grant, Ibis, 1907, p. 588.

An immature male of the Yellow-breasted Long-tailed Sunbird was met with at Lake Helene on the 12th of February.

101. Nectarinia pulchella.

Nectarinia pulchella (Linn.); Shelley, ii. p. 23 (1900); Neumann, J. f. O. 1906, p. 256; Ogilvie-Grant, Ibis, 1907, p. 587.

The Northern Beautiful Sunbird was procured in the neighbourhood of Lakes Helene, Zwai, Abbaya, Bakate, Stefanie, and Rudolf. The series includes males in eclipse-plumage, and those beginning to assume breeding-dress, obtained in December; also birds in a still more advanced condition of moult, shot in the early part of February. Full-plumaged males were obtained in February, August and September.

102. Nectarinia tacazze.

Nectarinia tacazze Stanley; Shelley, ii. p. 26 (1900).

Nectarinia takazze takazze Neumann, J. f. O. 1906, p. 257.

The Tacazze Sunbird was met with commonly in almost every part of southern Abyssinia visited by Zaphiro, and he obtained a large series during the greater part of the year, but between the 15th of November and the 24th of April little collecting seems to have been done, and no specimens of this bird were obtained. This was unfortunate, as the males shot in the middle of November were just beginning to assume an eclipse-plumage on the head and throat, somewhat similar to that of the female: other males killed on the 24th of April are all in full plumage. This bears out exactly the observations made by Shelley on birds of this species collected by Antinori and Ragazzi. Immature males obtained in June resemble the female in general appearance, but the middle of the breast and abdomen is distinctly greyer and less yellowish and the metallic feathers of the adult are making their appearance on the throat, back, rump, and lesser wing-coverts.

I have already pointed out [Trans. Zool. Soc. xix. p. 316 (1910)] that in *N. cupreonitens*, I had good reason to believe that the males did not assume an eclipse-plumage, as was apparently proved by the collections made in South Africa by Mr. Claude Grant which contained full-plumaged males killed during every month of the year.

103. Cinnyris cupreus.

Cinnyris cupreus (Shaw); Shelley, ii. p. 36 (1900); Neumann, J. f. O. 1906, p. 251.

A series of the Common Copper-coloured Sunbird was procured in April and May, mostly between the Gibbe River and the Charada Forest, Kaffa. Two of the males shot on the 28th of April and the 7th of May are partially in adult plumage.

104. Cinnyris habessinicus.

Cinnyris habessinicus (H. & E.); Shelley, ii. p. 46 (1900); Reichenow, iii. p. 484 (1905).

The Abyssinian Splendid Sunbird was met with near Lake Helene in February and at the north end of Lakes Rudolf and Stefanie in August. The British Museum possesses examples of this species, in the plumage described by Rüppell as *C. gularis*, killed in January, May, August (in partial full plumage), October, and December; also many specimens in full adult plumage collected in February, March, July, August, September, November, and December. There can be no doubt that birds of the *C. gularis* type, in grey plumage and with the throat metallic green, are immature. There is no reason to suppose that the males when they have once assumed adult plumage ever lose it after the breeding-season. [*Cf.* Shelley, *t. c.* p. 47.]

105. CINNYRIS OSIRIS.

Cinnyris osiris (Finsch); Shelley, ii. p. 53 (1900); Ogilvie-Grant & Reid, Ibis, 1901, p. 635.

Cinnyris mariquensis hawkeri Neumann; Reich. iii. p. 480 (1905); Neumann, J. f. O. 1906, p. 251.

The Abyssinian Bifasciated Sunbird was met with at Lakes Koya, Zwai and Helene, between December and February, all the males being in full adult plumage, except two specimens, which show a mixture of greyish feathers on the breast and belly: there is also an adult male shot in Konso in August.

C. m. hawkeri is based on birds in freshly moulted plumage. The differences in the metallic colours are due entirely to exposure, the green feathers becoming more copper-coloured as they become worn.

106. CINNYRIS AFFINIS.

Cinnyris affinis Rüpp.; Shelley, ii. p. 64 (1900).

A series of examples of the Abyssinian Yellow-breasted Sunbird were collected near Addis Abbaba, and at the Gibbe and Didessa Rivers, also in Wandu, Gamo, Walamo, and at Lake Zwai.

All five males obtained between August and October are in full plumage: while all those met with in April and May are changing from what appears to be an immature plumage, brownish-grey above and pale yellow below, to the adult plumage; two male specimens obtained in June and July are in nearly full plumage. The out-of-plumage males killed in April and May seem to be adult, judging by the rough scaling on the tarsus and other characters, in which case the male must assume an eclipse-plumage.

The series in the B.M. collection includes a male from Undul, N. Abyssinia, shot on the 19th of February by Blanford, and two males collected in God-jam on the 22nd of April by Mr. E. Degen; all these birds are changing into adult plumage, and are in a rather more advanced stage than those collected by Zaphiro. Again, there is a male from Lake Tsana obtained on the 19th of May by Degen which is not further advanced than those obtained by him a month earlier, this may possibly indicate that individuals from more northern parts of this bird's range assume their breeding-plumage rather later than those met with further south. Of course it still requires to be proven that the changing birds are not immature. Among the series obtained by Zaphiro in May some individuals are unquestionably young males beginning to assume their first adult plumage, but these are readily recognised by the smooth scaling of their tarsi and their shorter and more slender bills.

107. CINNYRIS CRUENTATUS.

Chalcomitra cruentata Rüpp.; Shelley, ii. p. 100 (1900).

Cinnyris senegalensis scioanus Neumann, J. f. O. 1906, p. 252.

The Abyssinian Scarlet-breasted Sunbird was procured at the Didessa River, and in Jimma, Kaffa, Konta, Konso, Gamo, Baroda, Walamo, Kambata, and near Lake Zwai. The series clearly proves that *C. s. scioanus* is synonymous with *C. cruentatus*. The supposed greater length of the wing in *C. s. scioanus* (72–77 mm.) is not borne out by the specimens, many north Abyssinian birds having a wing of 73–74 mm.

108. CINNYRIS RAGAZZII.

Cinnyris obscurus ragazzii Salvad.; Neumann, J. f. O. 1906, p. 249.

Cinnyris ragazzii Ogilvie-Grant, Trans. Zool. Soc. xix. p. 321 (1910).

Ragazzi's Olive Sunbird was met with on the Urguessa

River and in Jimma in May, also in Kaffa in June. It appears to be a rare species and the collector remarks that he never met with it before. I have already (*l. c.*) discussed the affinities of this species.

109. ANTHOTHREPTES ORIENTALIS.

Anthothreptes orientalis Hartl.; Shelley, ii. p. 145 (1890).

Anthreptes longmari orientalis, Neumann, J. f. O. 1906, pp. 244 & 247.

The Eastern Violet-backed Sunbird was met with in the district round the northern end of Lakes Rudolf and Stefanie in August and at Lakes Bakate and Abbaya in September.

Family ZOSTEROPIDÆ.

110. ZOSTEROPS ABYSSINICA.

Zosterops abyssinica Guérin; Shelley, ii. p. 192 (1900); Ogilvie-Grant, Ibis, 1904, p. 264; Reichenow, iii. p. 435 (1905).

The Abyssinian White-breasted White-eye was only met with in the neighbourhood of Lake Zwai in January and at Bourka, Arussi, in February.

111. ZOSTEROPS OMOËNSIS.

Zosterops omoënsis Neumann, J. f. O. 1906, p. 242.

A series of examples of the Omo White-eye was procured near the Gibbe River, at Gomma, Gofa, Uba, Baku, and the north end of Lake Rudolf. All bear out the characters for distinguishing the species from *Z. abyssinica* given by Professor Neumann, such as the yellowish olive-green back and brighter golden-green throat, while the horn-coloured bill and almost entire absence of yellow on the forehead distinguishes them at a glance from *Z. poliogastra.* It should be noticed, however, that in freshly moulted examples killed near the Gibbe River and in Gomma in April and May, the sides of the breast and flanks are distinctly washed with isabelline; whereas in birds from the type-locality, Gofa, Uba, etc. shot in July, there is very little trace of brown on the flanks. I have mentioned this as Professor Neumann notes it as a distinctive character.

Males and females are similar in size, the length of the wing varying from 54–57 mm.

112. ZOSTEROPS POLIOGASTRA.

Zosterops poliogastra Heugl. ; Shelley, ii. p. 190 (1900) ; Neumann, J. f. O. 1906, p. 241.

Zosterops poliogastra erlangeri Neumann, Bull. B.O.C. xxi. p. 60 (1908).

A male of Heuglin's White-breasted White-eye was procured in the Managasha Forest, near Addis Abbaba, on the 28th of October. A year later two males were collected in Walamo, 6200 feet, in September. The first named specimen is larger with a wing-measurement of 63 mm. ; while both the latter are rather smaller, measuring 57 and 58 mm. respectively. All these specimens have the sides and flanks in very worn plumage and are greyer than examples killed between December and May ; but an examination of the October specimen shows that the brownish feathers are partially grown. Neumann, who has separated the S. Abyssinian birds as *Z. p. erlangeri*, maintains that *Z. poliogastra* is confined to N. Abyssinia and has scarcely any yellow on the forehead, but an example from Tigrè does not differ in any way from the birds in the present collection.

Professor Neumann writes (Bull. B. O. C. xxi. p. 60) that the typical specimens of *Z. poliogastra* have a yellow superciliary stripe which has been much exaggerated in the figure given in the 'Ibis,' 1861, pl. xiii. I have examined one of the typical examples from Semien kindly lent me by Dr. Van Oort and find that there is no trace of a yellow supercilium. I cannot see any reason for separating birds from northern and southern Abyssinia.

113. ZOSTEROPS JUBAËNSIS.

Zosterops jubaënsis Erlanger, Orn. Monatsb. ix. p. 182 (1901).

Zosterops smithi Neumann, Orn. Monatsb. x. p. 139 (1902).

The Juba or Ajuba White-eye was not previously represented in the British Museum. It is readily distinguished from *Z. flavilateralis* by the darker olive-colour of the upperparts which are tinged with greyish, the narrower yellow frontal band and the paler yellow underparts. A series of specimens shows that there is no difference in size, as indicated by Reichenow [Vög. Afr. iii. p. 429 (1905)]. The specimens procured by Dr. Donaldson Smith at the Sillul River in Ogaden, Somaliland, were identified by Sharpe as *Z. flavilateralis* and afterwards described by Prof. Neumann as *Z. smithi*. They appear to be identical with *Z. jubaënsis*.

As regards *Zosterops tenella* Hartl. from Abyssinia, I cannot see that this bird is separable from specimens from Nyasaland and Mashonaland, which have been referred by Shelley to his *Z. anderssoni*, the type of which came from Elephant Vley, Damaraland. The Damaraland birds, though closely allied to Mashona and Nyasaland specimens, lack the distinct yellow band across the lores to the eye contrasting strongly with the olive plumage of the rest of the head. In *Z. anderssoni*, the yellow forehead, lores and ocular region shade imperceptibly into the yellowish-olive crown.

Both these birds are subspecies of *Z. senegalensis*, Bonap. which ranges from Gambia to the Bahr-el-Gazal and southwards to Kavirondo. In the Jackson collection there are two specimens with a wing-measurement of 55 mm., which appear to be referable to this smaller western form.

114. ZOSTEROPS VIRENS KAFFENSIS.

Zosterops virens kaffensis Neumann, J. f. O. 1906, p. 243.

A large series of the Kaffa White-eye seems to differ constantly from *Z. v. schoana* Neumann, *Z. v. jacksoni* Neumann, and *Z. v. kikuyuensis* Sharpe, and bears out the characters pointed out by its original describer. The yellow on the forehead does not extend beyond a line drawn between the eyes. Specimens were obtained about the Gebbe and Dalessa Rivers, also in Gomma, Jimma and Kaffa, where it was common.

This White-eye was not previously represented in the British Museum.

Family CERTHIIDÆ.

115. SALPORNIS SALVADORII ABYSSINICA, subsp. n.

Salpornis spilonotus nov. subsp. ? Neumann, J. f. O. 1906, p. 259.

A female of this Tree-Creeper was procured in thick forest at Nono near the Gibbe River on the 29th of April, and on the 31st a second specimen, a male, was shot at Limmu on the Urguessa River. These specimens are exactly alike in plumage and may be distinguished both from *S. salvadorii* (Bocage), and *S. s. emini* Hartlaub, by the distinctly rufous-buff colour of the breast and abdomen; the smaller white spotting on the mantle giving the upperparts a darker appearance; and the rather shorter bill. The most distinctive character is the rufous colour of the underparts. Iris, bill, and legs black.

It was no doubt an example of this subspecies that Professor Neumann obtained at Kaffa in March and referred to as a doubtfully distinct subspecies.

♂. Limmu, 31. iv. 05. Wing 93 mm. } *Types of the*
♀. Nono, 29. iv. 05. ,, 93 mm. } *subspecies.*

Family PARIDÆ.

116. PARUS LEUCOMELAS.

Parus leucomelas Rüpp.; Ogilvie-Grant, Ibis, 1907, p. 588.
Parus niger lacuum Neumann, J. f. O. 1906, p. 260.

A large series of this Black Titmouse collected in all parts of southern Abyssinia seems to show that the birds found in the lake district, about Lake Zwai, are on the whole slightly larger than others met with in Kaffa, Kullo, Gofa and southwards about the north end of Lake Rudolf. Ten specimens from Lake Zwai have a wing-measurement varying from 83–91 mm. and eleven from the more southern districts vary from 79 to 86 mm. Under these circumstances *P. n. lacuum* cannot be upheld.

117. PARUS LEUCONOTUS.

Parus leuconotus Reich. iii. p. 513 (1905); Neumann, J. f. O. 1906, p. 261.

The Buff-mantled Black Titmouse was met with on the Gudr River in April, at Kindjo in Jimma in May, and in the vicinity of Addis Abbaba in October and November. On Mergeta Mountain near Addis Alam it was found to be numerous above 10,000 feet, but on the lower ground the species appears to be but thinly distributed and rather scarce. In some specimens killed in October and November the feathers of the mantle are very light in colour, nearly white; at that season the birds are in moult and the worn feathers are being replaced by fresh ones of a pale buff colour. Specimens from Jimma killed in May are also in full moult. It would thus seem as though this species undergoes two moults, one in autumn and one in early summer.

Family Laniidæ.

118. Lanius nubicus.

Lanius nubicus Licht.; Ogilvie-Grant, Nov. Zool. ix. p. 464 (1902).

Fiscus nubicus Shelley & Sclater, B. Afr. v. pt. ii. p. 244 (1912).

A few examples of the Nubian Shrike were met with near Lakes Helene and Zwai between December and February. Shelley and Sclater have included this species, which is a true Shrike, in the genus *Fiscus*, an arrangement which certainly appears to be a mistake. The female of *L. nubicus* is generally browner than the male and lacks the rust-red or chestnut patch of feathers on either flank, a character always found in the females of the various species of *Fiscus*.

119. Lanius isabellinus.

Lanius isabellinus Hempr. & Ehr.; Ogilvie-Grant, Nov. Zool. ix. p 482 (1902).

Otomela isabellina Shelley & Sclater, B. Afr. v. pt. ii. p. 293 (1912).

A male of the Pale Red-tailed Shrike was procured at Lake Zwai in January.

120. Lanius humeralis.

Lanius humeralis Stanley; Ogilvie-Grant, Nov. Zool. ix. p. 466 (1902).

Fiscus humeralis Shelley & Sclater, B. Afr. v. pt. ii. p. 249 (1912).

A considerable series of Stanley's Fiscal Shrike was collected near Addis Abbaba, also in Jimma, Gofa, Kullo, and Lake Zwai district. In Gofa it was found breeding on Alba Hill at an elevation of 11,000 feet, and a half-grown female specimen in first plumage was procured on the 6th of July. Young were also obtained in May and June, at lower elevations, while a young male killed in October is beginning to assume adult plumage on the neck and mantle.

121. Lanius excubitorius.

Lanius excubitorius Des Murs; Shelley & Sclater, B. Afr. v. pt. ii. p. 264 (1912).

All the specimens of the Grey-backed Fiscal Shrike in the present collection have but little black at the tips of the outer pair of tail-feathers, the amount varying from about half an inch to one inch in length.

They are therefore, as Shelley and Sclater have pointed out, typical *L. excubitorius* with which *L. e. intercedens* Neumann from the Hawash Valley is entirely synonymous (*cf.* J. f. O. 1905, p. 228).

The species was widely distributed along the lake country from Addis Abbaba to Lake Stefanie. An interesting example in immature plumage was killed at Lake Abbaya on the 8th of September.

122. Tschagra jamesi.

Telophonus jamesi (Shelley); Neumann, J. f. O. 1907, p. 368.

Tschagra jamesi Shelley & Sclater, B. Afr. v. pt. ii. p. 383 (1912).

James' Bush-shrike was met with only at the north end of Lake Stefanie. We have not examined examples of Professor Neumann's *T. j. kismayensis* from the coast districts of southern Somaliland, but his *T. j. mandanus* from

Manda Island is a well characterised form easily distinguished by its paler head with a broader black median band and by its browner back.

123. TSCHAGRA HABESSINICA ERLANGERI.

Telophonus senegalus erlangeri Neumann, J. f. O. 1907, p. 373.

Tschagra habessinica erlangeri Shelley & Sclater, B. Afr. v. pt. ii. p. 371 (1912) [part.].

Erlanger's Black-headed Bush-Shrike was met with by Zaphiro throughout the greater part of his journey and was obtained in almost every month of the year.

The birds are on the whole rather larger and darker above than specimens of the true *T. habessinica* from northern Abyssinia.

In eleven males the wing measures from 53–62 mm., in three females it varies from 55·5–58 mm.

124. ANTICHROMUS MINUTUS.

Pomatorhynchus minutus (Hartl.); Neumann, J. f. O. 1905, p. 221.

Antichromus minutus Shelley & Sclater, B. Afr. v. pt. ii. p. 387 (1912).

The Lesser Bush-Shrike was met with near the Gibbe River, in Guma, Gomma, Jimma, Kaffa and Kullo, between April and June. I agree with Shelley and others in separating this species generically from the species included in *Tschagra*, for instance, *T. senegala*.

125. NILAUS MINOR.

Nilaus afer minor Sharpe; Erlanger, J. f. O. 1905, p. 691.

Nilaus minor Shelley & Sclater, B. Afr. v. pt. ii. p. 453 (1912).

The Lesser Brubru was met with in August in the country between the northern ends of Lakes Rudolf and Stefanie. Professor Neumann's division of this species into various forms (see J. f. O. 1907, p. 362), as Mr. Sclater has already pointed out, appears to me quite inadmissible; also, I cannot see any reason for regarding *N. minor* as a subspecies of *N. afer.*

126. Nilaus afer.

Nilaus afer (Lath.); Erlanger, J. f. O. 1905, p. 691; Shelley & Sclater, B. Afr. v. pt. ii. p. 456 (1912).

Nilaus afer hilgerti Neumann, J. f. O. 1907, p. 362.

The Northern Brubru was procured at Bourka, about Lake Zwai, and at Kambata, between September and February. These southern Abyssinian birds have been separated by Professor Neumann under the name *N. a. hilgerti* on account of the supposed darker, broader, and more confluent chestnut markings down the sides of the body; the character is, however, a very variable one, as is proved by the series before me.

127. Laniarius funebris.

Laniarius funebris (Hartl.); Shelley & Sclater, B. Afr. v. pt. ii. p. 327 (1912).

Laniarius funebris rothschildi Neumann, J. f. O. 1907, p. 595.

A male of the Slate-coloured Bush-Shrike was procured at Konso in August, and a female at Baku in July. These two specimens are typical examples of *L. f. rothschildi* Neumann, and they appear to be quite indistinguishable from typical *L. funebris* from German East Africa. The type-specimen of *L. funebris* was procured at Meninga on the Gombe River, about 200 miles east of Lake Tanganyika.

128. Laniarius æthiopicus.

Laniarius æthiopicus (Gmel.); Neumann, J. f. O. 1905, p. 222; Erlanger, J. f. O. 1905, p. 697; Shelley & Sclater, B. Afr. v. pt. ii. p. 312 (1912).

The Ethiopian Bush-Shrike was procured in the neighbourhood of Addis Abbaba, in October and November; in Arussi, at Bourka, and in the neighbourhood of Lake Koya and Lake Zwai, in January and February; and to the north-east of Lake Rudolf, in July.

129. LANIARIUS SULFUREOPECTUS SIMILIS.

Laniarius similis (Smith); Ogilvie-Grant, Ibis, 1907, p. 589.

Chlorophoneus sulfureopectus similis Shelley & Sclater, B. Afr. v. pt. ii. p. 427 (1912).

The Yellow-fronted Bush-Shrike was met with in the lake country, between Lake Zwai and Lake Rudolf, in January and February and between July and September. If the sex in the series of specimens before me has been carefully determined the plumage is quite *alike* in both male and female, the latter also possessing a black band from the lores to the eye. The specimen described by Shelley (*op. cit.*) as the adult female is no doubt immature.

I cannot see any reason for placing the smaller forms, such as the present species, in a distinct genus, *Chlorophoneus*; they seem to be similar in every way, except size, to *L. approximans* and its allies.

130. LANIARIUS APPROXIMANS.

Laniarius approximans (Cab.); Ogilvie-Grant, Ibis, 1908, p. 287.

Malaconotus approximans Shelley & Sclater, B. Afr. v. pt. ii. p. 412 (1912).

The Eastern Grey-headed Bush-Shrike belongs to the slightly larger race, which has been recognised by Professor Neumann as *Malaconotus poliocephalus schoanus*. Five males have a wing-measurement varying from 4·5 to 4·8 mm.; two females measure 4·5 and 4·7 mm. respectively.

131. LANIARIUS ERYTHROGASTER.

Laniarius erythrogaster (Cretzschm.): Ogilvie-Grant, Ibis, 1907, p. 589; id., Trans. Zool. Soc. xix. p. 340 (1910); Shelley & Sclater, B. Afr. v. pt. ii. p. 325 (1912).

A single example of the Scarlet-bellied Bush-Shrike was procured to the east of Lake Rudolf in the early part of August.

The supposed subspecies *L. e. chrysostictus*, described by Dr. Reichenow from Adamaua, is founded on an individual variation.

132. DRYOSCOPUS MALZACII.

Dryoscopus malzacii (Heugl.); Erlanger, J. f. O. 1905, p. 699; Shelley & Sclater, B. Afr. v. pt. ii. p. 346 (1912).

Dryoscopus malzakii erythreæ Neumann, J. f. O. 1905, p. 223.

A large series of Heuglin's Puff-backed Shrike, collected throughout the greater part of the year, shows very little variation in plumage; but some of the females have the underparts of the body more strongly washed with buff than others. The most brightly coloured bird in this respect is an immature male.

Family PRIONOPIDÆ.

133. EUROCEPHALUS RÜPPELLI.

Eurocephalus rüppelli Bonap.; Erlanger, J. f. O. 1905, p. 689; Shelley & Sclater, B. Afr. v. pt. ii. p. 447 (1912).

Rüppell's White-crowned Shrike was met with at the north end of Lake Rudolf, and northwards to Gamo, between July and September.

An immature female procured at Amar Koshi in August has the crown brown like the back, and the wing-coverts edged with pale brownish-white.

134. PRIONOPS CRISTATUS OMOËNSIS.

Prionops cristatus omoënsis Neumann, J. f. O. 1905, p. 216; Zedlitz, *t. c.* 1910, p. 795.

There is a large series of the Black-winged Helmet-Shrike in the present collection. The specimens killed at Lake Zwai in January, and at Magno, Bourka and Dalota in Arussi, in February, are in worn plumage and have the feathers on the hinder part of the crown brownish-grey with a distinctly rusty tinge, no doubt due to exposure. Those obtained between Lake Abbaya and Lake Rudolf, between June and September, are in fresh plumage and have the hinder part of the crown dark leaden-grey and the longer feathers of the crest above the eye rather better developed. There can be no doubt that all the specimens procured by Zaphiro are of the same form, but whether they should be kept separate from typical *P. cristatus* from north Abyssinia I am unable to say; for the British Museum possesses only two specimens from that part and their exact habitat is doubtful.

Immature birds killed in June, July, and September have the head pure white and a short crest on the fore part of the crown; the feathers of the upper parts brownish with pale edges.

Family Sylviidæ.

135. Melocichla mentalis.

Melocichla mentalis (Fraser); Ogilvie-Grant, Ibis, 1907, p. 594; id., Trans. Zool. Soc. xix. p. 346 (1910).

The Large Grass-Warbler was met with on the Urguessa River, also in Guma and Kullo.

136. Cisticola robusta.

Cisticola robusta (Rüpp.); Ogilvie-Grant & Reid, Ibis, 1901, p. 652.

Cisticola robusta robusta Neumann, J. f. O. 1906, p. 264.

Cisticola robusta schraderi Neumann, *t. c.* p. 265.

The Great Abyssinian Fan-tail Warbler was procured at the Akaki River, near the Gibbe River, and in Jimma.

Professor Neumann has separated birds from Senafè, north Abyssinia, as *C. r. schraderi*, but I have compared examples collected by Blanford in that locality and find them to be quite indistinguishable from the specimens in the present collection and from those procured in Shoa, &c.

137. Cisticola rufa.

Cisticola rufa (Fraser); Sharpe, Cat. Birds B.M. vii. p. 252 (1883).

Cisticola hypoxantha Hartl.; Neumann, J. f. O. 1906, p. 276.

The small Rufous Grass-Warbler was met with at Gomma in May, and at Gofa in July. Two adult males are assuming a dark striped plumage on the back, the third specimen, an immature female, is more rufous above. This species is evidently divisible into several races, but even with the rather large material now available I have found it difficult to arrive at any satisfactory conclusion. The birds in the present collection appear to be indistinguishable from typical *C. rufa* from West Africa, and I have, therefore, used that name.

Hartlaub's *C. hypoxantha* seems to have been founded on the more rufous Uganda and British East African form, but the type-specimen (an immature bird, which came from Magungu, Lake Albert) seems to have disappeared (*fide* Neumann). In this form the black striped plumage on the upperparts is merely indicated in a few specimens.

Specimens from the Congo and Landana also represent a more rufous race, but are heavily striped in non-breeding plumage.

138. CISTICOLA ERYTHROPS.

Cisticola erythrops (Hartl.); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 348 (1910).

The Buff-breasted Grass-Warbler was obtained at Lake Zwai on the 23rd of December; also at Konta and Kullo on the 15th and 16th of June. The birds killed in June are in breeding-plumage and have the crown and nape much browner than in the December bird, in which these parts are chestnut shading into rusty-red on the sides of the neck.

139. CISTICOLA SEMITORQUES.

Cisticola semitorques Heugl.; Reich. iii. p. 563 (1905).

Examples of this Plain-backed Grass-Warbler were obtained at Kullo in June, and at Gofa in July. The species is rare in Abyssinia and is seldom sent home in collections.

140. CISTICOLA CHINIANA CANTANS.

Cisticola chiniana (Smith); Reich. iii. p. 546 (1905) [part.].

Cisticola cantans (Heugl.); Reich. iii. p. 547 (1905).

Cisticola chiniana simplex (Heugl.); Reich. iii. p. 547; Neumann, J. f. O. 1906, p. 267.

The Abyssinian and East African form of the Larger Grey-backed Grass-Warbler was common in the vicinity of

Lake Zwai in January and February; it was also met with at Gofa, Lake Rudolf, Konso and Kambata, between July and September.

One somewhat immature male exhibits a variation in plumage, having the general colour above pale rufous.

I have spent some considerable time in studying the various forms of this widely distributed African species and have discussed them with Mr. W. L. Sclater, but as he is at present engaged in working out the genus *Cisticola* I do not propose to offer any remarks on this puzzling group.

141. CISTICOLA STRANGEI.

Cisticola strangei (Fraser); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 353 (1910).

Strange's Grass-Warbler was met with at Yeka, near Addis Abbaba, Lake Abbaya, Jimma, Kaffa, Konta, Kullo and Gofa.

A young specimen in first plumage, killed in July, has the upperparts light buff, streaked with black, and resembles the adult in winter-plumage.

142. CISTICOLA BRUNNESCENS.

Cisticola brunnescens Heugl.; Reich. iii. p. 559 (1905).

Cisticola hindei Sharpe; Hinde, Ibis, 1898, p. 580, pl. xii. fig. 2.

Hinde's Grass-Warbler was only met with at Yeka, near Addis Abbaba, on the 30th of September. There can be no doubt that Heuglin's name, *C. brunnescens*, refers to this species. The male has the middle of the crown nearly uniform rufous-buff, with a dark streak over each eye and a black patch on the lores in front of the eye; the female has the crown of the head streaked with black like the back; and both sexes have a very distinct blackish patch on each side of the chest.

143. CISTICOLA NANA.

Cisticola nana Fisch. & Reich.; Reich. iii. p. 560 (1905).

Cisticola dodsoni Sharpe; Reich. *t. c.*

Two examples of Dodson's Grass-Warbler were obtained at the north end of Lake Rudolf in August, and are in worn plumage. It seems to be a very rare species and the British Museum previously possessed two examples only, the type of *C. dodsoni* Sharpe, from Haud, Somaliland, and a male from the neighbourhood of Kilimanjaro procured by Mr. R. Kemp and forming part of the Rudd collection. This latter specimen is, of course, a typical example of *C. nana*, which was first obtained by Fischer at Ngaruka, to the west of Kilimanjaro.

144. CISTICOLA CINEREOLA.

Cisticola cinereola Salvad.; Ogilvie-Grant & Reid, Ibis, 1901, p. 651; Reich. iii. p. 548 (1905).

A female example of the Grey Grass-Warbler was shot in August at Menno, to the west of Lake Stefanie.

145. PRINIA ERLANGERI.

Prinia somalica erlangeri Reich. iii. p. 592 (1905); Erlanger, J. f. O. 1905, p. 724.

Prinia intermedia Jackson, Bull. B. O. C. xxvii. p. 7 (1910).

There appears to be no doubt that *P. intermedia* Jackson is a synonym of *P. erlangeri*, which is now represented for the first time in the British Museum collection. Two males and a female were met with at the north end of Lake Stefanie in August; these agree perfectly with the type-specimen of *P. intermedia* which was obtained at the Guaso Nyiro in August. *P. somalica* is represented in the British Museum by four males from Berbera, killed in January and February; these are all much paler birds, but are in somewhat worn plumage, especially those killed in February, in which the wing- and tail-feathers are moulting. The new quills in these birds, though darker than those of the old plumage, are paler than in examples of *P. erlangeri*, which appears to be a well-marked darker form.

146. PRINIA MYSTACEA.

Prinia mystacea Rüpp.; Ogilvie-Grant, Trans. Zool. Soc. xix. p. 366 (1910).

Two adult female examples of the Tawny-flanked Wren-Warbler were met with, one near Lake Zwai in January and the other in Jimma in May.

147. ORTHOTOMUS MAJOR.

Orthotomus major Blund. & Lovat; Ogilvie-Grant, Ibis, 1900, p. 158.

Heliolais maior Reich. iii. p. 570 (1905).

Two pairs of this rare Tailor-bird were collected by Zaphiro in Konta and Kullo between the 15th and 22nd of June, 1905. The type-specimen, a male in winter-plumage, with the crown and mantle vinaceous-red and the breast and belly very pale cinnamon, was shot by Lord Lovat at Gitemma, east of the Didessa River. The specimens in the present collection, and likewise an example killed by Emin Pasha at Tingasi in July, are in summer-plumage and have the crown and mantle much darker than in the type-specimen, while the chest and rest of the underparts are bright cinnamon, being of much the same colour as in breeding-specimens of *O. erythroptera*. The bill is light horn-colour as in the winter-bird.

Specimens of *O. erythroptera* in winter-plumage (January) have the crown and upperparts vinaceous-red, and the underparts below the chest pale cinnamon; in May and June the grey summer-plumage appears on the head and back, the breast and belly become brighter cinnamon and the bill becomes black (*cf.* Alexander, Ibis, 1902, p. 321). The Abyssinian *O. major* is easily distinguished by its much larger and stronger bill.

148. SCHŒNICOLA APICALIS.

Schœnicola apicalis (Cab.); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 353 (1910).

The Fan-tailed Reed-Warbler is widely distributed in East Africa southwards of about latitude 8° north. Adult examples were met with at Gomma in May and at Konta in June, while an immature female with the throat, breast, and belly yellowish-white was obtained at Gofa in July.

149. BRADYPTERUS CINNAMOMEUS.

Bradypterus cinnamomeus (Rüpp.); Erlanger, J. f. O. 1905, p. 723; Ogilvie-Grant, Trans. Zool. Soc. xix. pp. 354, 355 (1910); Pycraft, *t. c.* p. 454, text-fig. 14 (1910).

Rüppell's Reed-Warbler was met with only at Kullo at an elevation of 8000 ft., on the 17th and 18th of June. Two examples have twelve tail-feathers, a third is incomplete (*cf.* remarks on the examples of this species from Ruwenzori in my paper quoted above).

150. CALAMONASTES SIMPLEX.

Calamonastes simplex (Cab.); Ogilvie-Grant & Reid, Ibis, 1901, p. 649; Erlanger, J. f. O. 1905, p. 722.

The Brown Bush-Warbler was met with only between Lakes Rudolf and Stefanie in the month of August. All the specimens procured were females, both adult and less mature, with the chin whitish and the underparts barred with dull white and dusky.

151. CAMAROPTERA GRISEOVIRIDIS.

Camaroptera griseoviridis (v. Müll.); Erlanger, J. f. O. 1905, p. 730; Neumann, J. f. O. 1906, p. 278; Ogilvie-Grant, Trans. Zool. Soc. xix. p. 364, pl. xix. fig. 10 (egg) (1910).

The Grey-breasted Bush-Warbler was met with at Gomma, Jimma, Konso, Gamo, Lake Abbaya (Margherita), and Lake Zwai, in various months of the year.

A quite young bird killed at Lake Abbaya in September has the crown and upperparts uniform olive-brown and the breast and belly whitish washed with yellow down the middle; older examples killed in December and January have the crown and upperparts greyish-olive-brown, the chest tinged with brownish and the middle of the breast and belly mostly whitish; the most adult examples have the crown and upperparts dark greyish-brown, and the throat and underparts generally grey, indistinctly barred, and the middle of the lower breast and belly more or less white.

152. EREMOMELA GRISEOFLAVA.

Eremomela flaviventris griseoflava Erlanger, J. f. O. 1905, p. 733.

Examples of the Yellow-bellied Bush-Warbler were met with in the lake country, from Lake Zwai southwards to Konso, north of Lake Stefanie. They agree perfectly with a specimen from north-east Abyssinia.

153. Eremomela elegans abyssinica.

Eremomela elegans abyssinica Bannerman, Bull. B.O.C. xxix. p. 38 (1911).

Adult male and female. Most nearly allied to *E. elegans* (Heugl.), from which they differ in having the head and nape rather darker grey and less clearly defined from the upperparts, which are of a much darker olive-colour; the breast, belly, and rest of the underparts are paler yellow. Iris and bill black. Culmen 10 mm.; wing 53; tail 39; tarsus 15.

A considerable series of this new Bush-Warbler was procured at the following localities: the Didessa River, Guma, Gomma, Kaffa, Kullo, Walamo, and Lake Zwai in January, May, June, and September. They do not seem to vary in plumage, and differ constantly from *E. elegans* in the characters given above.

154. Apalis flavocincta malensis.

Apalis flavida malensis Neumann, J. f. O. 1906, p. 278.

Professor Neumann obtained a male example of this bird in the Malo country in January. The McMillan collection contains five specimens obtained in August a little further south in the country to the north of Lakes Rudolf and Stefanie. They are considerably smaller than typical examples of *A. flavocincta* (Sharpe), and the males have the pale yellow band across the chest widely bordered both above and below with dark olive-green, much as in *A. viridiceps*, but with the dark olive bands more clearly defined. The females have the chest yellow, without any trace of darker bands above and below. The wing-measurement in the male is 47–48 mm.; in the female 44·5–47 mm.

155. Apalis pulchella.

Phyllolais pulchella (Cretzschm.); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 360 (1910).

The Beautiful Bush-Warbler was met with at Lakes Zwai and Abbaya in December and January, and at Gamo, Konso, and the north end of Lake Rudolf in August and September.

156. SYLVIELLA WHYTII.

Sylviella whytii Shelley; Ogilvie-Grant, Ibis, 1900, p. 157.

Sylvietta jacksoni Sharpe; Reich. iii. p. 627 (1905); Erlanger, J. f. O. 1905, p. 732.

Whyte's Crombec was met with in the lake country, between Lake Zwai and the north end of Lake Stefanie. Zaphiro notes that it was not very common about Lake Zwai where it inhabited the mimosa trees; he also met with it at Lake Helene to the north, and at Kambata, Baroda, and Konso, in the months of January, February, August, and September.

7 ♂. Wing 56·5–61 mm. Average 60 mm.

2 ♀. „ 58, 62 mm. Average 60 mm.

157. SYLVIELLA BRACHYURA.

Sylviella brachyura Lafr.; Ogilvie-Grant, Ibis, 1907, p. 593.

Sylvietta brachyura nilotica Neumann, J. f. O. 1906, p. 279.

A single example of the Short-tailed Crombec was obtained at the Gibbe River on the 28th of April.

158. SYLVIELLA MICRURA.

Sylviella micrura (Rüpp.); Ogilvie-Grant, Ibis, 1900, p. 154; 1907, p. 593.

Sylvietta leucopsis Reich. iii. p. 629 (1905).

In 'The Ibis,' as quoted above, I have given my reasons for retaining the name of *S. micrura* Rüpp. for the White-eye-browed White-throated Crombec, which inhabits East Africa from Bogosland, eastern Abyssinia, and Somaliland southwards to Kilimanjaro.

The present collection contains examples from the north of Lake Stefanie and from Gamo, killed in August and September.

159. SYLVIA CURRUCA.

Sylvia curruca Linn.; Erlanger, J. f. O. 1905, p. 737.

The Lesser Whitethroat was met with in January and

February in the neighbourhood of Lake Zwai, and to the north at Lake Helene. The birds are attaining new greyish plumage on the crown and nape, and new greyish-brown feathers on the back; the newly moulted ear-coverts form a conspicuous dark grey patch.

160. SYLVIA HORTENSIS.

Sylvia hortensis Linn.; Ogilvie-Grant, Trans. Zool. Soc. xix. p. 357 (1910).

The Garden-Warbler was procured near the Gibbe River in April, and at Gamo in September.

161. SYLVIA ATRICAPILLA.

Sylvia atricapilla (Linn.); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 357 (1910).

A pair of Blackcaps were procured in the neighbourhood of Lake Zwai in January.

162. PHYLLOSCOPUS TROCHILUS.

Phylloscopus trochilus (Linn.); Neumann, J. f. O. 1906, p. 284.

The Willow-Warbler was obtained in the Managasha Forest near Addis Abbaba in October and on the Gibbe River in April.

163. HYPOLAIS PALLIDUS.

Hypolais pallidus (H. & E.); Neumann, J. f. O. 1906, p. 284.

A female was procured at Lake Zwai in January.

Family TURDIDÆ.

164. GEOCICHLA SIMENSIS.

Geocichla litsipsirupa simensis (Rüpp.); Reich. iii. p. 680 (1905).

Turdus simensis simensis Neumann, J. f. O. 1906, p. 286.

The Abyssinian Ground-Thrush was met with in the more hilly parts of southern Abyssinia, about Addis Abbaba, the Gudr River, Jimma, Kullo, Gofa and Walamo, at elevations varying from 4000–8000 feet. It was not obtained in the lake district between Lake Stefanie and Lake Zwai.

165. GEOCICHLA GURNEYI PIAGGIÆ.

Turdus gurneyi piaggæ Bouvier; Neumann, J. f. O. 1906, p. 286.

Geocichla piaggiæ Ogilvie-Grant, Trans. Zool. Soc. xix. p. 368 (1910).

Piaggia's Ground-Thrush was met with in Kaffa in June and in Gofa in July. Bouvier's type-specimen of *Turdus piaggiæ* (sic) was procured at Lake Sanne, Uganda, and is perfectly similar to the birds in the present collection. I have been unable to locate Lake Sanne; and Mr. Milne, of the Royal Geographical Society, has been unable to assist me in the matter. Sharpe (*cf.* 'Seebohm's Monograph of the Turdidæ,' i. p. 309 (1899)) was no doubt mistaken in believing it to be another name for Lake Tsana, in Abyssinia, but he was not then aware that this Thrush occurred in Uganda. It has been procured at Marsabit and Eldoma Ravine, and many were obtained by the Ruwenzori Expedition at elevations of from 5000–6000 feet.

166. TURDUS OLIVACEUS ABYSSINICUS.

Turdus abyssinicus Gmel.; Sharpe, in Seebohm's Monogr. Turdidæ, i. p. 309 (1899); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 368 (1910).

In the Abyssinian Thrush the coloration of the chin and upper part of the throat varies a good deal in different individuals. In one female from Addis Abbaba (October, iris brown-black, bill reddish-orange, feet orange) these parts are unusually white and distinctly streaked with blackish, much as in typical examples of *T. olivaceus*, Linn., from South Africa, but in the latter the white area extends over the whole throat and the black streaks are coarser. Other examples from Gomma, Kaffa, Kullo and Gofa (May to July) have the chin and throat dusky like the chest, and only faintly streaked. These differences may be seasonal. An immature female with the breast heavily spotted with black was killed in Kullo, at 8000 feet, on the 17th of June.

167. TURDUS LIBONYANUS PELIOS.

Turdus pelios Bonap.; Erlanger, J. f. O. 1905, p. 143; Reich. iii. p. 690 (1905).

Turdus libonyanus pelios Neumann, J. f. O. 1907, p. 285.

The Ethiopian Thrush was met with in various localities throughout the journey up to 5000 feet. One example from Uba, obtained on the 11th of July, is in very worn plumage and moulting heavily, both on the upper- and underparts of the body; the innermost secondaries also and the three left-hand outer tail-feathers are being renewed. The typical form from South Africa is a much larger bird and has the markings on the sides of the throat blacker and more distinct.

168. MONTICOLA RUFOCINEREUS.

Monticola rufocinereus (Rüpp.); Reich. iii. p. 697 (1905); Neumann, J. f. O. 1906, p. 287.

Specimens of the Abyssinian Rock-Thrush were procured in Kaffa, Konta, Gofa, Baku and Kambata, also near Lake Zwai. They do not differ in any way from more northern examples.

169. MONTICOLA CYANUS.

Monticola cyanus (Linn.); Reich. iii. p. 700 (1905).

A male and female of the Blue Rock-Thrush were procured in the Managasha Forest in October and November.

170. MONTICOLA SAXATILIS.

Monticola saxatilis (Linn.); Reich. iii. p. 699 (1905).

Immature examples of the Rock-Thrush, both male and female, were procured near Addis Abbaba in November, and on the Urguessa River on the 31st of April.

171. PHŒNICURUS FAMILIARIS OMOËNSIS.

Ruticilla galtoni omoënsis Neumann, J. f. O. 1906, p. 294.

Male examples only of the Omo Redstart were met with in Kaffa, Kullo, and Gofa in June. One example from Kaffa, killed on the 13th of June, has very little chestnut-brown at the base of the middle pair of tail-feathers, and is not distinguishable from *P. familiaris*. *P. f. omoënsis* is barely recognisable as a subspecies.

172. Phœnicurus mesoleucus.

Phœnicurus bonapartei (Müll.) and *P. mesoleucus* (H. & E.); Reich. iii. p. 781 (1905).

Ruticilla phœnicurus bonapartii Neumann, J. f. O. 1906, p. 294.

Among the series of Ehrenberg's Redstart procured near Lake Zwai in January and February, we find specimens referable to *P. bonapartei*. An examination of the skins in the British Museum from Asia Minor and Arabia seems to show clearly that the distinctions founded on the greyer or blacker colour of the back are of no importance.

173. Cossypha semirufa.

Cossypha semirufa semirufa Rüpp.; Neumann, J. f. O. 1906, p. 283.

Cossypha semirufa saturatior Neumann, *l. c.*

Typical examples of the Abyssinian Robin-Chat were met with in the neighbourhood of Addis Abbaba, ranging up to 10,000 feet on Mount Mergeta near Addis Alam. It was also obtained in Jimma and from Kullo, the birds from that locality having been separated (in my opinion quite unnecessarily) by Prof. Neumann as *C. s. saturatior*. The typical form was also found in Arussi to the east of Lake Zwai, while further east its place was taken by the following subspecies:—

174. Cossypha semirufa donaldsoni.

Cossypha semirufa donaldsoni Neumann, J. f. O. 1906, p. 283.

Cossypha semirufa Ogilvie-Grant, Ibis, 1904, p. 270 [part. Harrar].

A single example of this rather larger form, with grey wings and the middle pair of tail-feathers *black*, was obtained at Bourka on the 9th of February, when Zaphiro was apparently on his way to Harrar.

175. COSSYPHA HEUGLINI.

Cossypha heuglini Hartl.; Reich. iii. p. 758 (1905); Neumann, J. f. O. 1906, p. 282; Ogilvie-Grant, Trans. Zool. Soc. xix. p. 370 (1910).

Heuglin's Robin-Chat was met with in Walamo, at the Omo River, and in Gofa.

176. COSSYPHA VERTICALIS MELANONOTA.

Cossypha verticalis melanonota (Cab.); Reich. iii. p. 762 (1905).

Cossypha melanonota Ogilvie-Grant, Trans. Zool. Soc. xix. p. 371 (1910).

The specimens of the Black-backed Robin-Chat appear to belong to this darker and more southern form and not *C. verticalis*. The two birds are very closely allied, and greyer individuals of the present form are almost indistinguishable from Senegambian birds with their lighter coloured backs.

177. COSSYPHA NATALENSIS.

Cossypha natalensis Smith; Reich. iii. p. 754 (1905).

A single male example of the Natal Bush-Chat was procured in the Charada Forest, Kaffa, at an elevation of 3000 feet, on the 28th of May. Zaphiro, never having met with the species before, recorded the soft parts as follows: "iris black; bill black; legs brown." This specimen closely resembles the type, obtained in Natal, in the richer colour of the crown, mantle, lower back, and rump; only the sides of the mantle and an indistinct band across the middle of the back being dark slate-colour. Dr. Reichenow records the species as occurring from Juba in Somaliland to Natal, etc.; but it has never, until now, been represented in any of our collections from southern Abyssinia. It appears to be a rare bird living in thick forest, where it is difficult to procure specimens. Mr. Swynnerton found it common in Chirinda, S. Rhodesia, and obtained its nest and eggs.

The Charada bird is rather large with a wing measuring 99 mm. (3·9 inches). Other males from more southern localities are smaller, the longest wing-measurement being about 94 mm.

178. CICHLADUSA GUTTATA.

Cichladusa guttata Erlanger, J. f. O. 1905, p. 753; Reich. iii. p. 766 (1905).

C. g. guttata Neumann, J. f. O. 1906, p. 283.

The Spotted Robin-Thrush was met with near Lakes Rudolf and Stefanie, also in Uba and Konso, in July and August. Two younger examples, evidently birds of the year, have the spots on the chest distinctly smaller than in the adult specimens and fringed with creamy white.

Mr. Bannerman ('Ibis,' 1910, p. 695) has noted the difference in size between the birds found in the coastal districts of East Africa and those found inland, a point which Sharpe had already drawn attention to, when he named the coastal form *C. rufipennis* [*cf.* Bull. B. O. C. xii. p. 35 (1901)].

179. ERYTHROPYGIA LEUCOPTERA.

Erythropygia leucoptera (Rüpp.); Erlanger, J. f. O. 1905, p. 754; Reich. iii. p. 773 (1905).

Erythropygia leucoptera leucoptera Neumann, J. f. O. 1906, p. 284.

The Abyssinian Ground-Robin was met with on the northern shores of Lakes Rudolf and Stefanie in July and August.

180. THAMNOLÆA SEMIRUFA.

Thamnolœa semirufa Erlanger, J. f. O. 1905, p. 744; Reich. iii. p. 701 (1905); Neumann, J. f. O. 1906, p. 288.

The Chestnut-breasted Robin appears to be fairly common throughout southern Abyssinia, and specimens were obtained in most months of the year. Prof. Neumann has already pointed out that the sexes in this species are quite unlike in plumage, and that the females have generally been regarded as immature birds. In the most adult female examples the pale rust-coloured band down the middle of the throat is absent, but in younger specimens it is more or less well represented. Young birds are easily recognised by their spotted plumage, the feathers of both the upper- and underside being spangled with pale fulvous at the tips. Birds in first plumage were procured in May and September, but in the latter month much of the adult plumage had made its appearance on the underparts.

An immature male, killed in October, has nearly assumed the fully-adult plumage, but the crown, back, throat, etc., are still more or less spotted with buff.

181. THAMNOLÆA ALBISCAPULATA.

Thamnolæa albiscapulata (Rüpp.) ; Reich. iii. p. 703 (1905) ; Neumann, J. f. O. 1906, p. 288.

A few specimens of the Abyssinian White-shouldered Robin were met with, a male in Arussi, east of Lake Zwai, in January ; a pair on the Gudr River in April ; and two males at Sadeteka, in Gomma, in May. It is evidently a much rarer species than the last-named. The female is like the male, but lacks the white shoulder-patch.

182. THAMNOLÆA SUBRUFIPENNIS.

Thamnolæa subrufipennis Reich. ; Reich. iii. p. 702 (1905).

An adult male of the Chestnut-vented Robin, obtained at Kullo on the 26th of May, is the only representative of this species in the present collection. It is, however, of especial interest, as the species has not previously been met with in Abyssinia. It was known to range from the vicinity of Lake Victoria to Nyasaland, and its occurrence at Kullo therefore extends its habitat a long way further north. Both in this species and in the allied *T. cinnamomeiventris* (Lafres.), in which the under tail-coverts are chestnut, the females are quite different in plumage from the males. The head, neck, chest and mantle, as well as the lesser and median wing-coverts, are dark slate-grey instead of black, and the white shoulder-patch is absent.

183. PENTHOLÆA PACHYRHYNCHA.

Pentholæa albifrons pachyrhyncha Neumann, J. f. O. 1906, p. 289 (April 1906).

Pentholæa macmillani Sharpe, Bull. B. O. C. xvi. p. 126 (10th July 1906) [♀].

This species of Black Chat has the sexes differently coloured.

The male is distinguished from the male of the allied form *P. albifrons* (Rüpp.) from northern Abyssinia by having the white on the crown more extended, reaching nearly to the occiput.

The female, which was described as a new species by Sharpe under the above name, *P. macmillani*, has the general colour of the plumage browner than in the male, inclining to greyish on the forehead and crown; the feathers from the base of the bill to above the eye, together with the chin and throat, are pale greyish-isabelline and some of the feathers of the breast are fringed with the same colour.

The female of *P. albifrons* has the plumage brownish-black, only the feathers on the chin and upper throat being narrowly fringed with greyish.

The male has the iris crimson-black, the bill and feet black; the female has the iris black.

This species appears to be rare and very local in its distribution, and was met with only in Gofa in the forest of Chacha 4200 feet, at Wurke 6000 feet, and at Maaje 5100 feet, at the end of June. Prof. Neumann obtained his two type-specimens in the Omo district of Uba, close to Gofa.

The name "*pachyrhyncha*" which has been bestowed on this bird is rather misleading, for its bill does not differ in size from that of *P. albifrons*.

The West African *P. frontalis* (Swains.) is easily recognised by the slate-black colour of its plumage in both sexes, the male having a white forehead.

184. Pinarochroa sordida schoana.

Pinarochroa sordida (Rüpp.): Reich. iii. p. 713 (1905).

Pinarochroa sordida schoana Neumann, J. f. O. 1906, p. 290.

Pinarochroa sordida djamdjamensis Reich. iii. p. 714 (1905) [part.].

The specimens of this Bush-Chat sent by Zaphiro were obtained on Mt. Yeka, 8000 feet, close to Addis Abbaba, in September, and in the Managasha Forest in October. They appear to differ slightly from typical examples of *P. sordida*, procured by Blanford near Antalo and on the Wadela plateau, in being rather larger and in having a somewhat longer wing and tail.

	P. sordida.			*P. s. schoana.*	
	Wing. mm.	Tail. mm.		Wing. mm.	Tail. mm.
1 male	65	45	4 males	70–76	49–52·5
1 female......	67	45	4 females......	71–74·5	48–51·5

185. CERCOMELA FUSCICAUDATA.

Cercomela fuscicaudata (Blanf.); Reich. iii. p. 712 (1905).

The only example of Blanford's Mountain-Chat in the National collection was the type-specimen, a male, obtained in Bogosland. Zaphiro secured two female examples of this rare bird on the north-eastern shore of Lake Rudolf in August. One closely resembles the male type; the other has the breast darker, washed with smoky brown. The wing-measurement is 78 mm. (3·05 in.) in both specimens.

186. ŒNANTHE BOTTÆ.

Saxicola bottæ Bonap.; Reich. iii. p. 720 (1905); Neumann, J. f. O. 1906, p. 293.

The Abyssinian Chat was met with in the Managasha Forest and about Addis Abbaba in October.

187. ŒNANTHE LEUCOMELA.

Motacilla leucomela Pallas, Nov. Comm. Sci. Petrop. xiv. i. p. 584 (1770).

Saxicola pleschanka Lepech.: Reich. iii. p. 728 (1905); Neumann, J. f. O. 1906, p. 293.

The Eastern Pied Wheatear was obtained near Addis Abbaba and also at Lake Zwai.

188. Œnanthe isabellina.

Saxicola isabellina Cretzschm.; Reich. iii. p. 721 (1905); Neumann, J. f. O. 1906, p. 293.

The Isabelline Wheatear was met with about Addis Abbaba and also at Lake Zwai, between the months of October and January.

189. Saxicola rubetra.

Pratincola rubetra (Linn.); Reich. iii. p. 731 (1905); Neumann, J. f. O. 1906, p. 295.

A pair of Whin-Chats were procured at Walamo on the 13th of September.

190. Saxicola maura.

Pratincola maurus (Pall.); Reich. iii. p. 734 (1905).

Pratincola rubicola maura Neumann, J. f. O. 1906, p. 295.

Two males of the Indian Stone-Chat were obtained at Lake Zwai on the 19th of January.

191. Saxicola albofasciata.

Pratincola albofasciatus (Rüpp.); Reich. iii. p. 735 (1905).

Pratincola caprata albofasciata Neumann, J. f. O. 1906, p. 297.

The Black-and-White Stone-Chat is widely distributed over southern Abyssinia, and a very large series was collected throughout the greater part of the year, exhibiting all the changes of plumage in both sexes. Young birds in first plumage were procured in June and July.

Family Timeliidæ.

192. Crateropus smithi.

Crateropus smithi Sharpe; Erlanger, J. f. O. 1905, p. 738; Reich. iii. p. 664 (1905).

Crateropus leucopygius lacuum Neumann, J. f. O. 1906, p. 261.

Donaldson Smith's Babbling-Thrush was met with at Lake Koya, near Lake Zwai, and at Dalota and Bourka in Arussi in January and February. Prof. Neumann has separated the birds found in the lake district (from Lake Zwai to Lake Ganjule) under the above name, but the characters which are said to distinguish this subspecies from typical *C. smithi* do not appear to be of any importance.

193. Crateropus omoënsis.

Crateropus leucopygius omoënsis Neumann, J. f. O. 1906, p. 262.

The Omo Babbling-Thrush is rather a distinct form and is easily recognised by having the lores, fore-part of the cheek, chin, and throat blackish. It was found by Zaphiro in the same country where Mr. Neumann obtained it, viz., at Kullo (June), at Gofa and Uba (July), and at Walamo and Kambata (September), at altitudes varying from 4000 to 7000 feet. The birds killed in July are in moult.

194. Crateropus tenebrosus.

Crateropus tenebrosus Hartl. Zool. Jahrb. 1887, p. 313, pl. xii.; Reich. iii. p. 662 (1905).

The Natural History Museum now possesses five examples of this rare Babbling-Thrush. A male in the present collection was obtained at Tehega, in Gofa, 5500 feet, on the 25th of June, and Mr. Gilbert Blaine recently procured a pair on the Assua River, Bahr-el-Jebel (Equatorial Province of Uganda). In addition to these the Museum possessed two specimens from Fort Berkeley, close to the last-named locality. The plate of *C. tenebrosus* given by Hartlaub (*t. c.*) is not very satisfactory, the bird being rather too rufous, especially on the flanks. The pair shot by Mr. Blaine do not appear to differ in plumage, except that the male is somewhat greyer on the chest.

195. Argya rubiginosa.

Argya rubiginosa (Rüpp.); Erlanger, J. f. O. 1905, p. 738; Reich. iii. p. 672 (1905).

The Rufous-breasted Babbling Thrush was met with at Suksuki near Lake Zwai in January; to the north-east of

Lake Rudolf in July; and in Baroda in September. As already noted ('Ibis,' 1901, p. 661) Abyssinian examples of this bird are quite similar to those found in Equatorial Africa.

Of recent years the National collection has received a number of additional examples of the Rufous-faced Babbling-Thrush (*A. heuglini* Sharpe), afterwards, through a misunderstanding, renamed *A. saturata* Sharpe. The species is apparently confined to the coastal districts of East Africa.

ARGYA SHARPII.

Argya sharpii Ogilvie-Grant & Reid, Ibis, 1901, p. 662.

A large example of *Argya* procured by Donaldson Smith on the upper part of the Webi Shebeli below its junction with the Webi Daroli or Darde on the 27th of August 1904, has been separated as *Argya sharpii*. Dr. Reichenow has united this large form with *A. rubiginosa*, but there seems to be no particular reason for doing so and several excellent reasons for keeping it distinct. I have again examined the type-specimen which is in the Tring Museum. Its large size, coupled with its distinct geographical distribution, seems fully to justify its separation as a distinct subspecies.

A. rubiginosa.	*A. r. sharpii.*
Wing 3·35–3·5 ins. (=85–89 mm.).	Wing 3·75 ins. (=96 mm.).
Tail 4·0–4·3 „ (=102–110 mm.).	Tail 5·0 „ (=122 mm.).

196. LIOPTILUS ABYSSINICUS.

Lioptilus abyssinicus Ogilvie-Grant, Ibis, 1900, p. 173.

Alcippe abyssinica (Rüpp.); Reich. iii. p. 741 (1905); Erlanger, J. f. O. 1905, p. 750.

Alcippe abyssinica abyssinica Neumann, J. f. O. 1906, p. 281.

A female example of the Abyssinian Flycatcher was shot at Manno, in Jimma, on the 13th of May, and a male at the Gojeb River, Kaffa, on the 26th of May. The comparatively weak rictal bristles serve to distinguish the members of this genus from true *Alcippe* from India.

Family PYCNONOTIDÆ.

197. PYCNONOTUS ARSINOË SCHOANUS.

Pycnonotus arsinoë schoanus Neumann; Erlanger, J. f. O. 1905, p. 712; Reich. iii. p. 840 (1905).

Pycnonotus barbatus schoanus Neumann, J. f. O. 1906, p. 240.

The Abyssinian Bulbul was found near Addis Abbaba, at Lake Zwai, and at Bourka, Arussi; also in the Charada Forest, Kaffa, 4000–6000 feet.

This dark-backed bird is easily distinguished from the paler typical form of *P. arsinoë*, found in the Nile Valley. It differs even more from the Somaliland bird, *P. a. somaliensis* Reich., which, though also regarded as a subspecies of *P. arsinoë*, really belongs to a rather distinct group and is perhaps entitled to full specific rank. It is characterised by the marked white patch behind the ear-coverts and by having the dark feathers of the chest continued in a series of blotches over the upper breast. In *P. arsinoë* and *P. a. schoanus* the dark chest is sharply defined from the white breast.

198. PHYLLOSTREPHUS STREPITANS.

Phyllostrephus strepitans (Reich.); Neumann, J. f. O. 1906, p. 240.

As Prof. Neumann has pointed out, *P. sharpii* Shelley (Ibis, 1880, p. 334) and *P. pauper* Sharpe (P. Z. S. 1895, p. 489), are undoubtedly synonymous with *P. strepitans* (Reich.) (Orn. Centralb. 1879, p. 139).

This species has been named (or misnamed) by Stark, Reichenow's Bristle-necked Bulbul, but in very few examples are these filo-plumes visible. Examples were procured at the following localities: Gofa in June; the north of Lake Rudolf in July; Mircha and Konso in August; and Lake Bakate in September.

Family CAMPOPHAGIDÆ.

199. CORACINA CÆSIA.

Graucalus cæsius (Licht.); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 389 (1910).

Coracina cæsia (Licht.); p. 221, & *Coracina pura* (Sharpe): p. 222, Shelley & Sclater, B. Afr. v. pt. ii. (1912).

A pair of the Grey Cuckoo-Shrike were procured, the female at Kaffa in June and the male at Baku in July. In both specimens the wing measures 120 mm.

200. Coracina pectoralis.

Coracina pectoralis (Jard. & Selby); Shelley & Sclater, B. Afr. v. pt. ii. p. 218 (1912).

A female of the Pectoral Cuckoo-Shrike was shot at Baku in July. In Shelley's work, quoted above, we are told that the sexes are alike, but this is probably a mistake. As the authority for this statement a specimen in the British Museum, procured at Salisbury by Mr. G. A. K. Marshall, is quoted. This bird has the throat grey as in the male; there is likewise a second specimen, from Caconda, in male plumage marked as a female. In all the remaining female specimens, including that obtained by Zaphiro, the throat is white.

201. Campephaga phœnicea.

Campephaga phœnicea (Lath.); Shelley & Sclater, B. Afr. v. pt. ii. p. 210 (1912).

Campephaga xanthornoides (Less.); Shelley & Sclater, *t. c.* p. 213.

The Red-shouldered Cuckoo-Shrike was procured in almost every part of the country visited, at elevations ranging from 2000 feet (Sagan River) to 6000 feet (Charada Forest in Kaffa, and Kambata).

In the Charada Forest a male of the orange-chrome-shouldered variety, *C. xanthornoides* (Lesson), was shot along with normally coloured scarlet-shouldered males, and there can be no doubt that it is merely a colour-variety of *C. phœnicea*. The two forms are met with side by side from Tigrè southwards to Victoria Nyanza and westwards to the Gold Coast and Senegambia.

Probably *C. rothschildi* Neumann, from the south of Lake Stefanie, is also merely a variety of *C. phœnicea*.

Family MUSCICAPIDÆ.

202. MUSCICAPA GRISOLA.

Muscicapa grisola Linn.; Reich. ii. p. 449 (1903).

The Spotted Flycatcher was met with at Nono, near the Gibbe River, in April, and at Walamo in September.

203. ALSEONAX MURINUS PUMILUS.

Alseonax murinus pumilus Reich.; Reich. ii. p. 459 (1903); Neumann, J. f. O. 1905, p. 206.

Alseonax murinus djamdjamensis Neumann, J. f. O. 1905, p. 206.

Alseonax pumilus Ogilvie-Grant, Trans. Zool. Soc. xix. p. 391 (1910).

Examples of the Small Brown Flycatcher were procured at Gomma and Kaffa in May and June, but were not met with elsewhere. It might have been pointed out when describing the series of this bird from Ruwenzori, that the immature (which is easily recognised by the buff tips to the wing-coverts, etc.) has the middle of the breast and belly washed with buff, and in that stage of plumage closely resembles the adult of typical *A. murinus*. It seems doubtful if *A. m. pumilus* is really separable from *A. murinus* and is not based merely on fully adult examples. The amount of white on the throat varies much in different individuals. The two forms *A. murinus* and *A. m. pumilus* seem to occur side by side throughout their range. Probably both should be united with *A. minimus* (Heugl.) described in 1862.

As Prof. Neumann has already pointed out, it is probable that the narrowness of the base of the bill in the type-specimen of *A. minimus* is not normal.

204. HYLIOTA FLAVIGASTRA.

Hyliota flavigastra Swains.; Reich. ii. p. 473 (1903); Neumann, J. f. O. 1905, p. 209.

The Buff-bellied Flycatcher seems to be rather a rare bird; it was met with on the Didessa River and in Kaffa.

In the male the bill and legs are black, but in skins from

Equatorial Africa the under mandible seems to be generally plumbeous. I am unable to say if this slight difference of a dark under mandible is constant in the south Abyssinian bird.

205. PARISOMA GALINIERI.

Parophasma galinieri (Guer.); Reich. iii. p. 743 (1905); Neumann, J. f. O. 1906, p. 281.

Dr. Reichenow has created the genus *Parophasma* for this Flycatcher-Warbler, but I cannot see any good reason for separating it from *Parisoma* as it is evidently of the same genus as *P. subcæruleum,* which is the type of that genus (*cf.* Ibis, 1900, p. 153).

Specimens in the present collection were procured near Addis Abbaba in October, at Kullo in June, and at Gofa in July. It should be noted that the grey plumage in this species soon becomes brownish with wear.

206. PARISOMA PLUMBEA.

Parisoma plumbea (Hartl.); Reich. iii. p. 521 (1905).

Two female examples of the Grey Flycatcher-Warbler were killed in the Charada Forest in May and to the east of Lake Rudolf in July. Both are in worn plumage, especially the latter. The species was procured on the Upper White Nile by Emin, but does not appear to have been recorded before from southern Abyssinia.

207. PARISOMA BOEHMI.

Parisoma böhmi Reich.; Reich. iii. p. 521 (1905).

A female example of Böhm's Flycatcher-Warbler was procured in Konso on the 27th of August; it is unusually pale on the flanks, having only a small patch of rufous-buff.

208. PARISOMA LUGENS.

Parisoma lugens (Rüpp.): Ogilvie-Grant, Ibis, 1900, p. 153; Reich. iii. p. 522 (1905).

Zaphiro was fortunate enough to procure a small series of Rüppell's Brown Warbler, which seems to be fairly common in the neighbourhood of Addis Abbaba, but was not met with elsewhere.

Lord Lovat found it plentiful locally in upper Lika and procured two specimens, hitherto the only representatives of this species in the National Collection.

209. Chloropeta massaica.

Chloropeta natalensis massaica Fisch. & Reich. and *C. n. umbriniceps* Neumann; Reich. ii. p. 465 (1903).

Chloropeta massaica Ogilvie-Grant, Trans. Zool. Soc. xix. p. 396 (1910).

Examples of the Masai Yellow Flycatcher were procured at Jimma, Konta and Kullo, at altitudes of from 4000 to 5500 feet. The type-specimens of *C. n. umbriniceps* Neumann were obtained in Malo. The supposed darker brown colour of the crown is of no importance, and the birds collected by Zaphiro differ in no way from typical *C. massaica*.

210. Platystira cyanea æthiopica.

Platysteira cyanea æthiopica Neumann, J. f. O. 1905, p. 210.

In using Prof. Neumann's name for the south Abyssinian form of *P. cyanea* (Müller) I do so with some hesitation. He has distinguished this subspecies on account of its somewhat smaller size. In the female of *P. cyanea* the foreneck and chest are uniform dark chestnut almost to the breast, only the basal margin being blackish, but in two female examples collected in May at Guma and Jimma respectively, the foreneck is chestnut widely bordered below with black, giving these parts in the two specimens referred to an unusual appearance; in a third specimen, however, from Gomma, also killed in May, the colouring of the chest is normal. Wing-measurement 60–61 mm.

211. Batis orientalis.

Batis orientalis (Heugl.); Reich. ii. p. 481 (1903); Ogilvie-Grant, Trans. Zool. Soc. xix. p. 398 (1910).

Batis senegalensis orientalis Neumann, J. f. O. 1905, p. 209.

Heuglin's White-flanked Flycatcher is represented by examples from Lake Zwai in January, Lake Rudolf in July, Lake Bakate in September, and Addis Alam in November.

As so often happens with birds of this group, Zaphiro appears to have made mistakes in ascertaining the sex of several of the specimens collected.

212. BATIS SENEGALENSIS.

Batis senegalensis (Linn.) ; Reich. ii. p. 480 (1903).

A specimen marked as a male and which is no doubt immature, is similar to the female of *B. senegalensis* as regards the coloration of the underparts, having the same wide light chestnut breast-band ; but the crown and back are dark slate-grey, instead of brown washed with rufous, and the *rufous eyebrow stripe is entirely wanting*, only a short whitish supra-loral streak from the base of the bill to the eye being present. That the sex has been correctly ascertained as male is suggested by the presence of several partially black feathers on the right side of the breast indicating the black pectoral band of the adult. It is possible, nay even probable, that this immature specimen may represent an undescribed subspecies, for there is no reason to suppose that the immature male of *B. senegalensis* has a *grey* head, and the species has never been recorded from Abyssinia. More material is required to settle this point.

BATIS POËNSIS Alexander.

Batis poënsis Alexander, Bull. B. O. C. xiii. p. 34 (1903).

I may here remark that two adult male and female examples of this distinct little Flycatcher were procured by Mr. Willoughby P. Lowe at Sekondi, Gold Coast, but were wrongly identified as *Batis senegalensis* (*cf.* Bannerman, 'Ibis,' 1912, p. 226). It is important to mention this as the occurrence of this insular species on the Gold Coast is of interest.

213. TCHITREA VIRIDIS.

Tchitrea viridis (Müll.) ; Reich. ii. p. 504 (1903).

It had been my intention to publish extensive notes on the changes of plumage in this species and its allies, but the difficulty of arriving at any satisfactory solution of their varied plumages coupled with lack of time have obliged me to abandon the attempt for the moment. There can be hardly any doubt but that the present species and also *T. duchaillui* Cassin interbreed with some of the allied forms and that the puzzling stages of plumage often to be found among series of these birds, quite outside the normal changes from rufous to white, can only be accounted for in this way.

The present collection includes:—

a. An almost entirely black-and-white adult male with the tail white; and a few chestnut feathers on the rump and mantle. Charada Forest, 3rd of June.

b. An adult male with the tail white and the mantle almost entirely chestnut. Sombo, near Addis Alam, 15th of November.

c, d. Two adult males with the outer tail-feathers chestnut, the mantle uniform chestnut. Holata, near Addis Alam, 12th of November, and Maroko, Lake Zwai, 16th of January.

e. An adult male in chestnut-and-black plumage with only the outer webs of the inner quills bordered with white. Jimma, 16th of May.

f, g. An immature male and an adult female, with chestnut back and short chestnut tail. Uba, 10th of July, and Holata, 13th of November.

214. Cryptolopha umbrovirens.

Cryptolopha umbrovirens (Rüpp.); Erlanger, J. f. O. 1905, p. 683.

A male example of this Flycatcher was procured in June in the Charada Forest, Kaffa, at an elevation of 6000 feet. It is unfortunately moulting and in poor condition, but appears to be referable to the typical form of this species described by Rüppell from Simen. Examples in the British Museum from Waghar, N. Somaliland (*cf.* 'Ibis,' 1910, p. 312) are referable to the larger and darker backed *C. n. omoënsis* Neumann.

215. BRADYORNIS GRISEUS.

Bradornis griseus Reich.; Reich. ii. p. 435 (1903); Neumann, J. f. O. 1905, p. 204.

Bradornis griseus erlangeri Reich.; Erlanger, J. f. O. 1905, p. 680.

Bradyornis pumilus Sharpe; Ogilvie-Grant & Reid, Ibis, 1901, p. 643.

The Grey Robin-Shrike was met with in the country between the north end of Lake Rudolf and Lake Stefanie, in July and August; also about Lake Zwai and Lake Helene, in January and February. Wing-measurement 75–78 mm.

216. BRADYORNIS GRANTI.

Bradyornis sp. inc. Ogilvie-Grant, Ibis, 1907, p. 592.

Bradyornis granti Bannerman, Bull. B. O. C. xxvii. p. 84 (1911).

The existence of this small fulvous-breasted Robin-Shrike was first noticed by myself, when two examples were collected by Zaphiro on the Baro River. Subsequently he collected a series which clearly proved that the south Abyssinian bird was quite distinct from the allied forms. Examples were procured at the following localities: Gibbe River, Gomma, Jimma, Kaffa, Konta, Gofa, Uba, Baku, Walamo and Kambata, between April and September. The series includes a number of young birds, killed between May and July, with buff-spotted upperparts and brown edges to the feathers of the foreneck and chest, giving these parts a mottled appearance. The species is easily distinguished from its allies by its small size, darker brown upperparts, and tawny-buff underparts, characters which are less marked in a female from Kambata. This specimen also has the upperparts rather greyer than the rest of the series. Wing 76–84 mm.; tail 67–71.

Notes on the Genus Bradyornis.

As great confusion exists among the species and subspecies of *Bradyornis*, I have been obliged in studying the above-mentioned species to make a careful revision of the whole group, so as to define, if possible, more clearly the various forms. I have also prepared a key to the species, as the one given in Dr. Reichenow's 'Vögel Afrikas' did not appear to me to assist one much in the identification of these difficult birds.

The forms of *Bradyornis* which I am able to recognise are represented in the National Collection by specimens from the localities mentioned below.

It should be noted that in all the species the males are considerably larger than the females and that the young birds are always more brightly coloured on the underparts than the adults, especially on the flanks and under tail-coverts.

1. Bradyornis griseus Reichenow.

Bradyornis griseus Reichenow, J. f. O. 1882, p. 211 [Mgunda Mkali].

Bradyornis microrhyncha Reichenow, J. f. O. 1887, p. 62 [Irangi].

Bradyornis pumilus Sharpe, P. Z. S. 1895, p. 480 [Hargeisa].

? *Bradornis parvus* Reichenow, Orn. Monatsb. xv. p. 171 (1907) [Asholi, N. Uganda].

Hab. Somaliland: Goolis foot-hills (*Lort-Phillips*); Waghar and Burao (*Bury*); Eil Dab, 100 miles S.S.E. of Berbera, and Galkayu, 120 miles N.W. of Obbia (*Hamerton*); Hargeisa (*Donaldson Smith*: type of *B. pumilus* Sharpe); Dabolok, Sheikh Wufli and Ujawaji (*Hawker*); Farfanyer and Udveris, 3200 ft. (*Bennett Stanford*); Gerloguby (*Delamere*); Gildessa (*Pease*).

Abyssinia: Hoorsa and Melkadegaga (*Pease*); Quala, Guerague (*Degen*); N. of Lake Stefanie, 2000 ft., and N. of Lake Rudolf, 2600 ft. (*Zaphiro, Donaldson Smith*).

Uganda and B. E. A.: Loronio, River Kos, White Nile (*Emin*): Turkwel River (*Jackson*); Elgeyu, 3000 ft. (*Jackson*): Guaso Nyiro, 3000 ft. (*Delamere, Jackson*); Guaso Narok, 4300 ft. (*Jackson*); Lake Baringo (*Delamere*); Athi River (*Delamere*); Mombasa (*Fischer, Jackson*).

Wing 77–84 mm.; tail 60–65.

2. Bradyornis pallidus (Müller).

Muscicapa pallida Müller, Naumannia, 1851, Heft iv. p. 28 [Abyssinia]; id. Beitr. Orn. Afr. 1854, Taf. 8.

Hab. Northern Abyssinia: Bogosland (*Esler*); Arriro, north of Addis Abbaba (*Lovat*).

Wing 92–96 mm.; tail 84–86.

3. Bradyornis pallidus subalaris Sharpe.

Bradyornis subalaris Sharpe, P. Z. S. 1873, p. 713, pl. lviii. fig. 1 [Mombasa].

Hab. Coastal districts of East Africa: Dar-es-Salaam (*Kirk*); Mombasa (*Wakefield*: type of *B. subalaris* Sharpe; *Percival*); Takaungu (*Percival*); Lamu (*Kirk, Jackson*); Witu (*Jackson*).

White Nile: Lango (*Jackson*); Langomeri, Gosa and Fadjuli (*Emin*); Bahr-el-Gazal (*Blaine*); Moradar (*Zaphiro*); Kaka (*Hawker*).

I am unable to distinguish coastal birds from those mer with on the White Nile. Apparently they range by way of the Tana River and the south end of Lake Rudolf westwards to the Nile. A similar distribution is observed in *B. griseus.*

Wing 80–86 mm.; tail 67–71.

Dr. Reichenow (*cf.* Vög. Afr. ii. p. 436) has united this form with *B. murinus,* but the latter is a quite distinct species and easily distinguished, as will be seen by referring to the key to the species given below.

4. Bradyornis granti Bannerman.

Bradyornis granti Bannerman, Bull. B. O. C. xxvii. p. 84 (1911) [Gibbe River and Walamo].

Hab. Southern Abyssinia: Kambata, Walamo, Baku, Uba, Gofa, Konta, Kaffa, Jimma, Gomma, and Gibbe River (*Zaphiro*: types of *B. granti* Bannerman); Baro River (*Zaphiro*); Zeraf River (*Dunn*).

Wing 76–84 mm.; tail 67–71.

5. BRADYORNIS MURINUS Hartl. & Finsch.

Bradyornis murinus Hartl. & Finsch, Vögel Ost-Afr. iv. p. 866 (1870) [Kakonda].

Bradyornis oatesi Sharpe, in Oates' Matabeleland, p. 314, pl. B (1881) [Makalaka].

Bradyornis muscicapina Hartl. Abh. Bremen, xii. p. 9 (1891) [Bagamoyo].

Bradyornis griseus Sclater (*nec* Hartl. & Finsch), Ibis, 1911, p. 419.

Hab. British East Africa: Guaso Nyiro, 6000 ft. (*Delamere, Lowe*); Amala River, 5300 ft. (*Lowe*); Mt. Elgon, 6000–7000 ft. (*Jackson, Kemp*); Laikipia, 7000–7500 ft. (*Delamere, Jackson, Kemp*); Mt. Kenia, 4000 ft. (*Delamere, Jackson*); Lake Naivasha, 6300 ft. (*Jackson*); Eldoma Ravine, 7500 ft. (*Jackson*); Nairobi, 5400 ft. (*Jackson*); Machakos (*Hinde*).

Uganda: Kigoma, 4000 ft., and Kikonda, 3600 ft. (*Jackson*); S.E. Ruwenzori, 3400 ft. (*Legge & Dent*); Mulema, 5000 ft. (*Doggett*). Belgian Congo: N. of Lake Tanganyika, 3000 ft. (*Carruthers*); Lualaba River, Kalungwisi River, Lake Mweru (*Neave*); Lake Bangweolo (*Neave*). Nyasaland: N. of Lake Nyasa (*Sharpe*); Nyika Hills, 6000 ft. (*Whyte*); Kasungu and Bua (*Sharpe*); Angoniland (*Sharpe*); Zomba (*Whyte*); Fort Lister (*Whyte*); Mt. Milanji (*Whyte*). Portuguese East Africa: Cheringoma Dist., Mozambique (*Cavendish*); Coguno, Masambeti and Beira (*C. H. B. Grant*). Rhodesia: Chirinda, Gazaland, 3500 ft. (*Swynnerton*); Salisbury, 5000 ft. (*Marshall & Swynnerton*); Makalaka (*Oates*: type of *B. oatesi* Sharpe). South Africa: Zululand (*Woodward*); Klein Letaba and Legogot, Transvaal (*C. H. B. Grant*). Angola: Kakonda, Benguela (*Anchieta*: cotype of *B. murinus* Hartl. & Finsch).

Wing 85–101 mm.; tail 70–79.

6. BRADYORNIS MURINUS MODESTUS Shelley.

Bradyornis modesta Shelley, Ibis, 1873, p. 110 [Abokobi].

? *Bradyornis pallidus nigeriæ* Reichenow, Orn. Monatsb. xviii. p. 95 (1910) [Adamaua].

Hab. Gold Coast Hinterland: Dokonkade (*Alexander*); Abokobi = Kintampo (*Shelley*: type of *B. modestus* Shelley; *Alexander*); Gambaga (*Alexander*).

Southern Nigeria: Anambara River (*Lowell*).

Northern Nigeria: Semaukar River; Tarkum; Bima; Kina, River Gongola; Badiko; Leri (*Alexander*).

French Congo; Shari River at Iddio, Manjafa, Ft. Archambault (*Alexander*); Gribingi River (*Alexander*); Tomi River, Yakola and Krebeje (*Alexander*).

Wing 80–89 mm.; tail 66–70.

7. BRADYORNIS MARIQUENSIS A. Smith.

Bradornis mariquensis Smith, Ill. Zool. S. Afr., Aves, pl. 113 (1847) [Marico River, Transvaal].

Hab. South Africa (*Smith*: types of *B. mariquensis* Smith); Griqualand West (*Atmore*); Transvaal (*Ayres, Buckley*); Rustenburg (*Lucas, Ayres*); Macloutsie River (*Jameson*); Tati and Gerufa (*Oates*); Bamangwato (*Buckley*); Zambesi (*Bradshaw*); Damaraland (*Andersson*); Great Namaqualand (*Andersson*).

Wing 84–90 mm.; tail 72–79.

8. BRADYORNIS INFUSCATUS A. Smith.

Saxicola infuscata Smith, Ill. Zool. S. Afr., Aves, pl. xxviii (1839).

Bradyornis major Bonap. Consp. Av. i. p. 267 (1850) [descrip. nulla].

Hab. South Africa: Western Cape Colony between Oliphant River and Orange River (*Smith*: types of *S. infuscata* Smith); Port Nolloth, Little Namaqualand (*C. H.*

B. Grant); Klipfontein, Little Namaqualand (*C. H. B. Grant*).

Culmen 19 mm.; tarsus 30–31; wing 108–117; tail 79–84.

9. BRADYORNIS INFUSCATUS SEIMUNDI, subsp. n.

Bradyornis infuscatus Sharpe (*nec* Smith), Ibis, 1904, p. 317 [Deelfontein].

Adult male and female. Similar to *B. infuscatus* but with a much smaller bill, the culmen measuring 16 mm. from the feathers on the forehead to the tip. Wing 108–117 mm.; tail 79–89; tarsus 28.

Hab. Cape Colony: Deelfontein (*Seimund & C. H. B. Grant*: types of *B. i. seimundi* Ogilvie-Grant); Hopetown (*Atmore*); Kuruman (*Woosnam & Dent*); Warrenton, Vaal River (*Woosnam*); Hart River (*Jameson*); Transvaal (*Ayres*).

10. BRADYORNIS INFUSCATUS BENGUELLENSIS Sousa.

Bradyornis benguellensis Sousa, J. Lisboa, xliii. p. 160 (1886).

Hab. Lehutitu, Western Kalahari, 3000 ft. (*Woosnam & Legge*); Great Namaqualand (*Andersson*); Damaraland (*Andersson*); Benguela (*Anchieta*: cotype of *B. benguellensis* Sousa).

Wing 108–114 mm.; tail 75–81.

11. BRADYORNIS INFUSCATUS ANSORGII, subsp. n.

Bradyornis benguellensis Ogilvie-Grant, Ibis, 1912, p. 393 [part.].

Adult male and female. Similar to *B. i. benguellensis* Sousa, but with the upperparts distinctly greyer and the underparts much paler and whiter, the breast only being washed with pale brownish-grey, instead of pale isabelline; while the vent and under tail-coverts are pure white.

Wing 97–109 mm.; tail 69–76.

Hab. Northern Benguela (*Monteiro*); Catumbella and Huxe (*Ansorge*: types of *B. i. ansorgii* Ogilvie-Grant).

A series of this pale subspecies was procured by Dr. W. J. Ansorge in August and September. They may be recognised at a glance from the more southern *B. i. benguellensis*.

Key to the Species of Bradyornis *.

I. Exposed portion of culmen from feathers on forehead to tip 13 mm. or less. Tarsus about 20 mm. or less.

  A. Crown light brownish-grey or grey with distinct dark brown shaft-streaks: rest of upperparts light brownish-grey or grey. Wing 77–84 mm. .... *B. griseus.*

  B. Crown dark brown, greyish-brown or rufous-brown, not distinctly streaked or very rarely so.

    a. Crown and upperparts dark earth-brown; underparts suffused with rufous-buff. Size smaller; wing 76–84 mm. .... *B. granti.*

    b. Crown and upperparts pale brown; throat and underparts whitish washed with pale buff on the breast and flanks.

      a'. Size larger: wing 92–96 mm........... *B. pallidus.*

      b'. Size smaller: wing 80–86 mm. .... *B. p. subalaris.*

    c. Crown and upperparts greyish-brown; throat pure white contrasting strongly with the pale greyish-brown breast and sides.

      c'. Size larger: wing 85–101 mm. .... *B. murinus.*

      d'. Size smaller: wing 80–89 mm. .... *B. m. modestus.*

    d. Crown and upperparts rufous-brown, underparts pure white. Wing 84–90 mm. .... *B. mariquensis.*

II. Exposed portion of culmen from feathers on forehead to tip 16–19 mm. Tarsus 27–31 mm.

  C. Upperparts brown; underparts mostly buffy-brown, contrasting with the whitish-buff throat and middle of the belly. Wing 108–117 mm.

    e. Culmen long, 19 mm.; tarsus 30–31 ...... *B. infuscatus.*

    f. Culmen shorter, 16 mm.; tarsus 27–28 .... *B. i. seimundi.*

  D. Upperparts pale brown: breast and flanks pale brownish-buff, throat and belly white. Wing 108–114 mm.; culmen 16; tarsus 27–28. *B. i. benguellensis.*

  E. Upperparts greyish-brown; underparts mostly white except the breast and flanks which are pale brownish-buff, with white edges to the feathers. Wing 97–109 mm.; culmen 16; tarsus 27–28 .... *B. i. ansorgii.*

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* I have not examined *B. sylvia* Reichenow, Orn. Monatsb. xvii. p. 42, from Rio Campo, Cameroon. It appears to be a small bird; wing 73 mm.; tail 60.

217. Melænornis pammelaina.

Melænornis pammelaina (Stanl.); Reich. ii. p. 441 (1903); Neumann, J. f. O. 1905, p. 205.

Melænornis pammelæna Ogilvie-Grant, Ibis, 1907, p. 592.

A large series of Stanley's Cuckoo-Shrike was collected at the Didessa River and Gomma in May, at Gofa and Kubo in June, again at Gofa and at Uba in July, and round Lake Zwai in January and February. The adult birds killed in May and June are in worn plumage and much blacker than those killed in January and February, which are comparatively freshly moulted and have the plumage of a more slaty tint. It seems probable that *M. schistacea* Sharpe is founded on freshly moulted birds, and that Dr. Reichenow was right in uniting it with *M. pammelaina* Stanley. Immature birds killed in the last week in June have the upper- and underparts blackish heavily spotted with rufous-buff.

218. Dioptrornis chocolatinus.

Dioptrornis chocolatinus (Rüpp.); Reich. ii. p. 441 (1903); Neumann, J. f. O. 1905, p. 205; Erlanger, J. f. O. 1905, p. 681.

Muscicapa reichenowi Neumann, Orn. Monatsb. x. p. 10 (1902) (Gimirra).

Dioptrornis reichenowi Reich. ii. p. 441 (1903); Neumann, J. f. O. 1905, p. 205.

A large series of this Grey Robin-Shrike collected over a wide area from Addis Abbaba southwards to Gofa between the months of June and November, clearly shows that the differences believed by Neumann to be characteristic of his *M. reichenowi* are partly due to age and partly seasonal. The specific name "*chocolatinus*" is not a very appropriate one; since freshly moulted old birds have the upperparts darker and much greyer than birds in first plumage which are brownish-grey. This point is clearly proved by quite young specimens still partially in the first spotted plumage and which are assuming greyish-brown feathers on the back; all the immature birds which have completed their first moult may be recognised by having the greater wing-coverts edged with brownish. Most old birds killed between January and May, or even June, are browner, the upperparts being in worn plumage.

A nearly white nestling was procured in the Charada Forest, Kaffa, on the 2nd of June; other normally-coloured young were met with about the same date and in July.

Family HIRUNDINIDÆ.

219. HIRUNDO RUSTICA.

Hirundo rustica Linn.; Reich. ii. p. 406 (1903); Neumann, J. f. O. 1905, p. 200; Erlanger, *t. c.* p. 675.

The Common Swallow was met with in the lake country at Walamo and Lake Zwai and at Bourka, Arussi, in September, January and February.

220. HIRUNDO PUELLA.

Hirundo puella Temm. & Schl.; Reich. ii. p. 413 (1903); Neumann, J. f. O. 1905, p. 201; Erlanger, *t. c.* p. 677.

The Lesser Stripe-breasted Swallow was only met with in two places, at Guma east of the Didessa River in April and at Gomma in May.

221. HIRUNDO MELANOCRISSA.

Hirundo melanocrissa (Rüpp.); Reich. ii. p. 419 (1903); Neumann, J. f. O. 1905, p. 201.

The Abyssinian Mosque-Swallow was obtained round Addis Abbaba in April, September and October; also at Gofa in July.

In the most mature birds, both male and female, the shaft-streaks on the feathers of the chest and upper breast are wanting. Two young female examples killed on the 25th of April are in moult, the underparts are pale whitish-buff with many half-grown rufous-buff feathers on the chest.

222. HIRUNDO SENEGALENSIS.

Hirundo senegalensis Linn.; Reich. ii. p. 415 (1903); Neumann, J. f. O. 1905, p. 201; Erlanger, *t. c.* p. 677.

The Great African Mosque-Swallow was met with at the Akaki River, south of Addis Abbaba, in October; at

Kaffa, Gofa, Lake Rudolf, and Walamo in June, July and September; and at Bourka, Arussi, in February. In two male examples the under tail-coverts are spotted or tipped with black.

223. Hirundo smithii.

Hirundo smithi Leach; Reich. ii. p. 410 (1903); Neumann, J. f. O. 1905, p. 201; Erlanger, J. f. O. 1905, p. 676.

The Wire-tailed Swallow was found at Gofa, Uba, Baroda and Walamo between June and September. An immature female with the head brown tinged with rufous above the eye and on the occiput, and with the upperparts sparingly glossed with dark greenish-blue, was killed at Baroda in September.

224. Psalidoprocne antinorii.

Psalidoprocne antinorii Salvad.; Reich. ii. p. 429 (1903); Neumann, J. f. O. 1905, p. 202; Erlanger, *t. c.* p. 679.

Antinori's Rough-winged Swallow was met with in Jimma, Kaffa, Kullo, Gofa and Baku, between May and July.

A young female from Adie Kaka, in Kaffa, killed on the 10th of June, has the crown and back dull bronze-brown, without any purple gloss, and the underparts, especially the breast and belly, smoky-brown without any gloss. The under wing-coverts are mostly brownish-black, while in the adult they are pure white.

225. Psalidoprocne blanfordi.

Psalidoprocne blanfordi Weld-Blundell & Lovat; Ogilvie-Grant, Ibis, 1900, p. 178.

An adult male of Blanford's Rough-winged Swallow, obtained at Didessa on the 5th of May, differs slightly from the type-specimen, which was killed a little further east at Bilo, in having the underparts rather greener. An immature male was also shot in the same neighbourhood at Limmu, on the Urguessa River, on the 2nd of May. There can, I think, be no doubt that this species is quite distinct from *P. pristoptera* (Rüpp.) (*cf.* Neumann, J. f. O. 1905, p. 203).

The iris in the adult bird is black: in the younger specimen "blue."

226. PSALIDOPROCNE PRISTOPTERA.

Psalidoprocne pristoptera (Rüpp.); Reich. ii. p. 429 (1903); Neumann, J. f. O. 1905, p. 202.

An adult male of the Blue Rough-winged Swallow was procured at Roke, to the west of Addis Abbaba, on the 24th of April. It is very distinct from the other species mentioned above, having the entire upper- and underparts deep black glossed with steel-blue.

227. RIPARIA RUFIGULA.

Riparia rufigula (Fisch. & Reich.); Reich. ii. p. 400 (1903); Neumann, J. f. O. 1905, p. 200; Erlanger, *t. c.* p. 675.

A single male example of Fischer's Rock-Martin was procured at Dissa, Kullo, 4000 feet, on the 22nd of June.

228. RIPARIA PALUDICOLA MINOR.

Riparia minor (Cab.): Reich. ii. p. 397 (1903); Erlanger, J. f. O. 1905, p. 674.

A male of the Sudan Lesser Sand-Martin was procured at Lake Zwai in January and a female at the Gato River, Konso, in August. The wing-measurement in the male is 109 mm., in the female 110. At Antoto a longer-winged specimen (wing 117 mm.) was killed in October, but it appears to be only an unusually large individual.

229. RIPARIA CINCTA ERLANGERI.

Riparia cincta (Bodd.); Reich. ii. p. 394 (1903); Neumann, J. f. O. 1905, p. 200.

Riparia cincta erlangeri Reich.; Erlanger, J. f. O. 1905, p. 673.

Three examples of the Brown-collared Sand-Martin obtained near Addis Abbaba in April and October belong to the slightly larger northern form which has been distinguished as *R. c. erlangeri*.

[To be continued.]

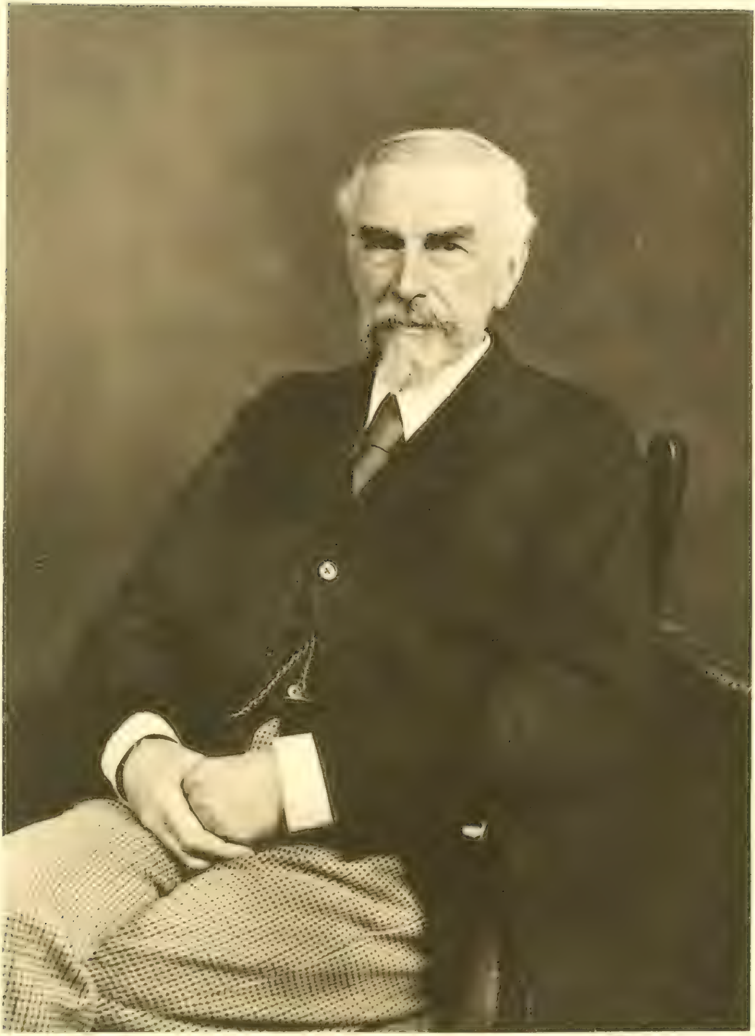
XXXIV.—*Obituary.*

PHILIP LUTLEY SCLATER, THOMAS AYRES, and Dr. J. W. B. GUNNING.

PHILIP LUTLEY SCLATER. (Plate XIII.)

BY the death of Philip Lutley Sclater, D.Sc., F.R.S., the world of science has sustained a severe loss, which our members, from his connexion with them, must feel even more acutely than his innumerable friends both at home and abroad. Not only was he of world-wide reputation for a long life's work, but the various posts which he held at different periods entitled him to be considered of late the head of that branch of learning to which he was specially devoted, as well as a great power in zoology generally. He always had the welfare of ornithology at heart, and was not only ready but anxious to further any project for its advancement, while his kindness and consideration to all beginners who applied to him were equally characteristic. The names of Bowdler Sharpe, Garrod, and W. A. Forbes will at once occur to us in this connexion, but these are a mere drop in the ocean compared to the long list of all who have owed their position or their reputation to his support, and those of them who are still alive will have heard with the keenest regret of his removal from our midst. It may, perhaps, be permitted to the present writer here to strike a personal note by expressing his own feeling of gratitude for all Dr. Sclater's kindness towards him, both in early life and while joint-editor with him of 'The Ibis,' and to add his tribute to the memory of a great ornithologist and a warm and consistent friend. As an original member of our Union, as editor of our Journal, and as chairman of the British Ornithologists' Club Dr. Sclater was connected with all of us by the closest of ties, and thus this notice must be considered as an expression of the greatest regret and at the same time a token of the greatest esteem put forward in the name of every member of the B.O.U.

The subject of our notice was born, on the 4th of November



P L Sclater

1829, at Tangier Park, in Hampshire, then the residence of his father, Mr. William Lutley Sclater, J.P.; but his boyhood was passed at Hoddington House, another estate in the same county, also belonging to his father, to which the family moved in the month of September 1833.

In beautiful Hampshire, not far from the old home of Gilbert White, Sclater acquired, at an early age, a love for outdoor life and exercise and a special taste for the study of birds. At the age of ten he was sent to a well-known school at Twyford, near Winchester; in 1842 he left for Winchester College, and in 1845 was elected Scholar of Corpus Christi College, Oxford. Being at that time under sixteen years of age, he was not called into residence until Easter, 1846. At the University his attention was given principally to mathematics, though his spare time was occupied by the study of birds, and of the excellent series of natural-history books then in the Radcliffe Library.

Hugh E. Strickland, the well-known ornithologist, who was at that time resident in Oxford as Reader in Geology, became interested in young Sclater, and it was at his house that he met John Gould, shortly after his return from his great journey to Australia. From Strickland he received his first instruction in scientific ornithology. He began his collection of bird-skins at Oxford, making British skins for himself, and buying foreign specimens whenever he had the opportunity.

In December 1849, he took the Degree of Bachelor of Arts, obtaining a first class in the mathematical school and a "pass" in classics. At that time these were the only two recognised subjects for study in the University, no sort of encouragement being given to Natural Science. After taking his degree Sclater remained in Oxford for two years, devoting his time principally to Natural History. He also gave much attention to modern languages, studying them with masters at home and always visiting the Continent in vacation-time, and thus soon made himself familiar with French, German, and Italian.

At this period of his life he was often in Paris, studying at the National Museum in the Jardin des Plantes. Here he made the acquaintance of the great ornithologist, Prince Charles Bonaparte, at whose house, in the Rue de Lille, he was a frequent visitor. In 1851 he entered as a student at Lincoln's Inn, while the winter of 1852–53 was devoted to travel in Italy and Sicily.

In December 1855, Sclater was admitted Fellow of his college, and, having in the previous June been called to the Bar, went on the Western Circuit for several years.

In 1856 he made his first journey across the Atlantic, in company with the Rev. George Hext, a fellow Oxonian. Leaving England in July, they went by New York up the Hudson to Saratoga, and there attended the Meeting of the American Association for the Advancement of Science. After that they went to Niagara, and thence through the Great Lakes to Superior City, at the extreme end of Lake Superior. Here they engaged two Canadian "voyageurs," and travelled on foot through the backwoods to the upper waters of the St. Croix River. This they descended in a birch-bark canoe to the Mississippi. Sclater subsequently published an account of this journey in the third volume of 'Illustrated Travels.' Returning by steamboat and railway to Philadelpia, he spent a month studying the splendid collection of birds belonging to the Academy of Natural Sciences in that city, where he formed the acquaintance of John Cassin, Joseph Leidy, John Le Conte, and other then well-known members of that Society. He returned to England shortly before Christmas 1856. For some years after this he lived in London, practising at the Bar, but always working steadily at natural history. He was a constant attendant at the meetings of the Zoological Society of London, of which he was elected a Fellow in 1850, and in 1857 became a Member of the Council. In 1858 he took a prominent share in founding 'The Ibis,' and became its first Editor.

In January 1859, Sclater made a short excursion to Tunis and Eastern Algeria, in company with his friend E. C. Taylor. They visited the breeding-places of the Vultures and Kites in the interior, and gathered many bird-skins, returning to London at the end of March.

At this time Mr. D. W. Mitchell, Secretary of the Zoological Society, was about to vacate his post, in order to take charge of the newly instituted Jardin d'Acclimatation in Paris. As his successor Sclater was selected by Owen and Yarrell, then influential members of the Council, and was unanimously elected at the Anniversary Meeting on April 30th, 1859.

He found it necessary for several years to devote himself entirely to the reorganization of the affairs of the Society. The 'Proceedings' and 'Transactions' were at that time several years in arrear—they were brought up to date; the 'Garden Guide,' which was out of print, was re-written; the large staff at the Gardens was re-arranged and divided into departments under the Superintendent, and various other reforms were introduced.

In 1874, when his brother (then the Right Hon. George Sclater-Booth, M.P., and afterwards Lord Basing) accepted office in Mr. Disraeli's administration as President of the Local Government Board, Sclater became his private secretary, a position which he occupied for two years. But when subsequently offered a permanent place in the Civil Service he declined it, because he could not make up his mind to give up his dearly loved work in natural history. His most engrossing duties were in connexion with the Zoological Society of London, to which, as principal executive Officer, he, of course, devoted most of his time. It is conceded by all that its affairs prospered well under his direction. The number of Fellows of the Society, about 1700 in 1859, increased to over 3000. The income of the Society, which in 1858 was a little over £14,000, rose to £30,000. Besides this, nearly all of the principal buildings in the Society's Gardens were rebuilt and fitted up with every sort of modern convenience for animals. The old Office-building (No. 11 Hanover Square) was sold, and was replaced by a much larger and more convenient house (No. 3 Hanover Square) in the same vicinity. A debt of

£12,000 was paid off, and the house became the freehold property of the Society without any sort of encumbrance. The first floor of the Society's house was devoted to the accommodation of a large and very valuable zoological library, under the care of a Librarian and his assistant, and was the constant resort of the working zoologists of the metropolis. This library had been almost entirely accumulated since 1859. Sclater was also instrumental in the adoption of that important work 'The Zoological Record,' by the Society.

Sclater, as already mentioned, was selected by the British Ornithologists' Union as the first editor of its journal, 'The Ibis,' in 1859. He finished the first series in 1864. Professor Newton took his place as editor of the second series, and Osbert Salvin as editor of the third. In 1877 Sclater was associated with Salvin as editor of the fourth series, and in 1883 commenced the editorship of the fifth series with Howard Saunders as co-editor. When the fifth series was completed, in 1888, he became sole editor of the sixth, which he finished in 1894. In 1895, having again obtained the assistance of Howard Saunders, he commenced work on the seventh series, and finished it in 1900. Taking A. H. Evans as co-editor he completed the eighth series in 1906, and the ninth series in 1912.

When the British Ornithologists' Club was established in 1892, he joined heartily in the movement inaugurated by Dr. R. Bowdler Sharpe, and was elected Chairman. He was most regular in his attendance at the monthly meetings, occupying the chair and delivering an inaugural address at the commencement of each session.

With the British Association for the Advancement of Science Sclater had a long connexion, having become a member in 1847, at the second Oxford meeting, and having attended its meetings with few exceptions for many years. For several years he was Secretary of Section D, and at the Bristol meeting in 1875 he was President of that Section and delivered an address "On the present state of our Knowledge of Geographical Zoology." In 1876 he was elected one of the two General Secretaries of the Association, together with Sir Douglas Galton, and served in that capacity for five years, thereby becoming an *ex officio* member of the Council, at the meetings of which he continued to be a constant attendant.

In 1886 Sclater began the transfer of his private collection of American bird-skins to the British Museum. This collection contained 8824 specimens, representing 3158 species, belonging to the Orders Passeres, Picariae, and Psittaci. It may be remarked that when he began his collection at Oxford in 1847 he intended to collect birds of every kind and from all parts of the world, but after a few years he resolved to confine his attention particularly to the Ornithology of South and Central America, and to collect specimens only in the Orders above mentioned, which were at that time generally less known than the others and of which the specimens are of a more manageable size for the private collector.

At the time of the beginning of this transfer, which was only completed in 1890, Sclater agreed to prepare some of the volumes of the British Museum 'Catalogue of Birds,' relating to the groups to which he had paid special attention. In accordance with this arrangement, by the expenditure of fully two years of his leisure time on each volume, he prepared the eleventh volume in 1886, the fourteenth in 1888, the fifteenth in 1890, and half of the nineteenth in 1891.

When the 'Challenger' Expedition started to go round the world in 1873, at the request of his friend, the late Sir Wyville Thomson, he agreed to work out all the birds. Soon after the return of the expedition in 1877 the specimens collected were placed in his hands, and with the assistance of his ornithological friends were speedily reported upon in a series of papers contributed to the Zoological Society's 'Proceedings.' The whole of these papers were reprinted with additions and illustrations, and now form part of the second volume of the "Zoology" of the 'Challenger' Expedition.

Geography, being very closely connected with zoology, always commanded Sclater's hearty interest. He became a life-member of the Royal Geographical Society in 1880, and attended its meetings very regularly. He also served two years on the Council, and was a member of the Geographical Club. He assisted in promoting many researches in foreign parts, chiefly, however, with a view to obtaining collections in natural history from strange places. Among these may be especially mentioned Sir H. H. Johnston's expedition to Kilima-njaro in 1884 and Professor Bayley Balfour's visit to Socotra in 1880. He also took a leading part in sending out naturalists to Kerguelen Land and Rodriguez with the Transit-of-Venus Expeditions of 1874–75, and in many other similar efforts to explore little-known parts of the earth's surface.

In fact his work on Geographical Distribution and Classification may be considered his greatest claim to the gratitude of posterity. Of the former subject he set forth his views soon after 1858, when he suggested for the acceptance of ornithologists his six well-known geographical regions, while later he wrote, jointly with his son William, on the geographical distribution of Mammals. With regard to the latter subject, he propounded a Classification of the Class Aves in 'The Ibis' for 1880.

In 1884 he took advantage of the opportunity of the visit of the British Association to Montreal to cross the Atlantic a second time, and after the meeting to again visit the United States. He was not in good health at that period, and did little, if anything, in the way of zoology. But he had the pleasure of seeing several of his former friends, especially Messrs. Lawrence and Baird, and of making the personal acquaintance of Mr. Ridgway, Mr. Allen, Mr. Brewster, Dr. Merriam, and many other naturalists.

One of his closest friends was the late Professor Huxley, long a member of the Council of the Zoological Society, where he was one of Sclater's most constant supporters. Professor Huxley, it may be said, was the chief advocate of the project of employing an anatomist at the Society's

Gardens, and invented the title "Prosector" for the holder of the new office. A. H. Garrod, who became Prosector in 1871, and W. A. Forbes, who succeeded him in 1879—both very talented and promising young naturalists,—were dear friends of Sclater, and the unfortunate death of Forbes during an excursion to the Niger in 1883 was a most severe blow to him. Notable among his other friends was Charles Darwin, who frequently visited him in his office, bringing long lists of memoranda for conference.

Mr. Sclater married in 1862 Jane Anne Eliza Hunter Blair, daughter of the late Sir David Hunter Blair, Baronet, of Blairquhan, in Ayrshire. He had six children, of whom four are still living. One of them is particularly well known to us as our present Editor.

Sclater received the honorary degree of Doctor of Philosophy from the University of Bonn in 1860, and was made a Doctor of Science by the University of Oxford in 1901. He was elected a Fellow of the Royal Society in 1861, and has twice served on the Council. Besides the Societies already mentioned, he was also a Life-Fellow of the Linnean, Geographical, and Geological Societies, and a Corresponding or Honorary Member of upwards of forty other Scientific bodies at home and abroad.

Subsequently to his resignation of the Secretaryship of the Zoological Society in 1903 (after forty-three years' tenure of that important post), Sclater resided entirely at his house at Odiham, in Hampshire, within easy reach of London, and continued to be a constant visitor to the Zoological Society's Library and the great collection of birds at South Kensington. In North Hants he was widely known as an active J.P. and a frequent rider with the Hampshire Hunt, of which he was by far the oldest member.

Sclater's death took place, as the result of a carriage accident, on June 27, 1913, at the age of eighty-three years. He leaves a widow, three sons and a daughter.

A. H. Evans.

The following appreciations are communicated by John Graham Kerr, F.R.S., Regius Professor of Zoology at the University of Glasgow, and Michael John Nicoll, Assistant-Director of the Giza Zoological Gardens near Cairo, both of whom received much help and encouragement from the subject of our memoir:—

The pre-eminent position occupied by P. L. Sclater as an ornithologist, as the founder of the modern science of zoogeography, and as a general zoologist of extraordinarily wide knowledge, has received full recognition, but there is another aspect of his work less generally known but in which he wielded an important influence upon the progress of biology—I refer to the constant help and encouragement which he gave to young workers in zoological science.

Young zoologists—the best of whom are simply carrying on a loved hobby of their boyhood—are, when they embark upon the stream of serious investigation, perhaps more apt than most types of scientific worker to be whirled away on the stream of a particularly intense enthusiasm. They soon find themselves amongst the difficulties of the most difficult of all the sciences, and their initial enthusiasm becomes damped. They are apt, either to give up the science altogether, or to degenerate into mere collectors of "unmitigated fact." It is during this critical period in his career that the naturalist needs to have by him some strong and kindly friend. Such a friend in need to many a young enthusiast was P. L. Sclater.

Personally I owe much, perhaps more than most, to the help and encouragement of a few strong and loyal friends, and pre-eminent among these was Sclater: through his influence I was enabled to accompany the Page Expedition of 1889–91 to the Pilcomayo River in Paraguay, and in that unexplored region and amongst its wild Natokoi Indians, to undergo an educative experience of the greatest value to a naturalist. Later on it was mainly on his advice that I found myself at Cambridge and at Christ's, and throughout my career there

I derived inestimable advantage from his always available advice and help.

I know that my experience is not singular: it is merely one relatively unimportant example of a side of Sclater's activities which was carried on continuously, unobtrusively, effectively; which attracted no attention, which won no worldly recognition, and which yet constitutes a strong claim to gratitude on the part of Zoological Science to his memory.

J. Graham Kerr.

Although he was an old family friend, it was not until 1901 that I had the honour of meeting Mr. Sclater. Early in September of that year he, having heard of my wish for a zoological post, wrote and asked me to come to see him at his office in Hanover Square. Thus on the 11th September, 1901, I saw for the first time the kind friend to whom I owe so much.

This meeting was quickly followed by others, for during the next few months I had the privilege of working under him both in the Gardens and in the Library at Hanover Square.

It is and always will be a great satisfaction to me that I have had the honour of serving under, not only one of the greatest of ornithologists, but the most kind and considerate of chiefs.

During the time spent in his service I was able to see and appreciate to the full Mr. Sclater's unfailing kindness to those under him. His many acts of kindness will probably never be known except to their recipients; I know that I am but one of many young zoologists who owe more than can ever be expressed to Mr. Sclater.

Hardly was my work under him ended when Mr. Sclater sent for me to meet the late Earl of Crawford, to whom he had recommended me as Naturalist for the voyages of the 'Valhalla' R.Y.S.

During these voyages Mr. Sclater wrote to me frequently; his letters, all of which I have carefully treasured, were full of ornithological matters as well as advice, and this correspondence he continued, writing always kindly and always helpfully. The last letter was dated 4th May of this year.

On the many occasions when I had the privilege of being his guest at Odiham, ornithological excursions were always arranged for, and my first acquaintance of Great Crested Grebes was made under his guidance.

In the space allowed to me it is impossible to say all that I could wish. Those who have been helped and encouraged as much as I have been by Mr. Sclater, and they are many, will know without the telling what a real friend he was; his great store of knowledge was always at the disposal of those who asked for it, and whoever went to him for advice found that it was always freely given and was the best obtainable. It is impossible for me to express how deeply I feel his loss.

MICHAEL J. NICOLL.

BIBLIOGRAPHY.

A small pamphlet of 32 pages printed for private distribution in 1876 and entitled "List of the Zoological Works and Memoirs of P. L. Sclater, 1850–75," contains the titles of 512 separate works and papers published in various periodicals.

Subsequently, in 1896, there was prepared under the direction of Dr. G. Brown Goode and published as "Bulletin of the United States National Museum, No. 49," a "Bibliography of the published writings of Philip Lutley Sclater, F.R.S., Secretary of the Zoological Society of London."

This last-named work contains a biographical sketch with portrait. list of new families, genera and species described, as well as the bibliography proper in which 1287 titles are enumerated.

The present list of titles is restricted to those dealing with ornithology, and is intended to contain only those papers and separate works of more or less permanent interest. It is based on the two previously mentioned bibliographies and is brought up to date. It contains 582 titles in all, ranging from 1844 to 1913, a period of sixty years.

1. SEPARATE WORKS.

1. Tanagrarum Catalogus Specificus. Pp. 1–16. Basingstoke, 1854. 8vo.

2. A Monograph of the Birds forming the Tanagrine Genus *Calliste*; illustrated by coloured plates of all the known species. Pp. xviii+104, pls. i.–xlv. London (Van Voorst), 1857. 8vo.

3. Zoological Sketches by Joseph Wolf. Made for the Zoological Society of London, from animals in their vivarium in the Regent's Park. Edited, with notes, by P. L. Sclater. Vol. i. pls. i.–l. (1861); vol. ii. pls. i.–l. (1867), with letterpress to each plate. London (Greaves & Co.). Folio.

4. Nitzsch's Pterylography, translated from the German. Edited by P. L. Sclater. Pp. xii+181, pls. i.–x. London (published for the Ray Society), 1867. Folio.

5. Catalogue of a Collection of American Birds belonging to P. L. Sclater. Pp. xvi+368, pls. i.–xx. London (Trübner), 1862. 8vo.

6. Exotic Ornithology, containing figures and descriptions of new or rare species of American Birds. By P. L. Sclater and O. Salvin. Pp. vi+204, pls. i.–c. London (Quaritch), 1869. [Issued in two sizes, small folio and large folio.]

7. Nomenclator Avium Neotropicalium, sive Avium quæ in Regione Neotropica hucusque repertæ sunt nomina systematice disposita, adjecta sua cuique speciei patria; accedunt generum et specierum novarum diagnoses. Auctoribus Philippo Lutley Sclater et Osberto Salvin. Pp. viii+163. Londini (Sumptibus auctorum), 1873. Sm. folio.

8. A Monograph of the Jacamars and Puff-birds, or families *Galbulidæ* and *Bucconidæ*. Pp. liv+171, pls. i.–lv. London (Porter), 1882. 4to.

9. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Fringilliformes.* Part II., containing the families *Cœrebidæ*, *Tanagridæ*, and *Icteridæ*. Pp. xvii+431, pls. i.–xviii. London, 1886. 8vo. (Cat. Birds Brit. Mus., vol. xi.)

10. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Oligomyodæ*, or the families *Tyrannidæ*, *Oxyrhamphidæ*, *Pipridæ*, *Cotingidæ*, *Phytotomidæ*, *Philepittidæ*, *Pittidæ*, *Xenicidæ*, and *Eurylæmidæ*. Pp. xix+494, pls. i.–xxvi. London, 1888. 8vo. (Cat. Birds Brit. Mus., vol. xiv.)

11. Argentine Ornithology: A descriptive Catalogue of the Birds of the Argentine Republic. By P. L. Sclater, with notes on their habits by W. H. Hudson. Vol. i. pp. xxiv+208, pls. i.–x. (1888); vol. ii. pp. xv+251, pls. xi.–xx. (1889). London (Porter), 1888–89. 8vo.

12. Catalogue of the Passeriformes, or Perching Birds, in the Collection of the British Museum. *Tracheophonæ*, or the families *Dendrocolaptidæ, Formicariidæ, Conopophagidæ*, and *Pteroptochidæ*. Pp. xvii + 371, pls. i.–xx. London, 1890. 8vo. (Cat. Birds Brit. Mus., vol. xv.)

13. Catalogue of the Picariæ in the Collection of the British Museum. *Scansores* and *Coccyges*, containing the families *Rhamphastidæ, Galbulidæ*, and *Bucconidæ*. London, 1891. 8vo. (Cat. Birds Brit. Mus., xix. pp. 122–208, pls. vi.–x.)

2. PAPERS IN PERIODICALS.

1844.

14. Note on the Water Rail. Zoologist, ii. p. 669.

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385. On the Breeding of the Argus Pheasant and other *Phasianidæ* in the Society's Gardens. P. Z. S. 1879, pp. 114–118, pls. vii., viii.

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414. Exhibition of and remarks upon a skin of a *Chrysotis* from St. Lucia, West Indies. P. Z. S. 1881, pp. 627–628.

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416. Exhibition of a specimen of the Glossy Ibis (*Plegadis falcinellus*) shot at Dogmersfield Park, Hampshire. P. Z. S. 1881, p. 827.

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436. On the genera *Microbates* and *Rhamphocænus* of the family *Formicariidæ*. Ibis, 1883, pp. 92–96, pl. iii.

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440. Remarks upon a very singular habit of the Greater Vasa Parrot (*Coracopsis vasa*). P. Z. S. 1884, p. 410.

441. Remarks upon the death of a Greater Vasa Parrot (*Coracopsis vasa*) which has passed fifty-four years in the Society's Menagerie. P. Z. S. 1884, p. 562.

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465. Remarks on the fifth cubital remex of the wing in the Carinatæ. Ibis, 1890, pp. 77–83.

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473. On recent advances in our knowledge of the Geographical Distribution of Birds. Ibis, 1891, pp. 514–557.

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486. Exhibition of, and remarks upon, a specimen of *Phalaropus fulicarius* from Chili. Bull. B. O. C. i. p. lv.

487. Exhibition of, and remarks upon, a species of *Geophaps plumifera.* Bull. B. O. C. i. pp. lv–lvi.

488. Exhibition of, and remarks upon, a variety of *Psittacus erithacus.* Bull. B. O. C. iii. p. vii.

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491. Remarks on the Birds of Antarctica. Ibis, 1894, pp. 494–501.

492. Exhibition of the skin of a Rail (*Amaurolimnas concolor*) from Lima, Peru. Bull. B. O. C. iii. p. xxiii.

493. Remarks on the great inconvenience that would arise if the "*Scomber scomber*" principle was adopted in ornithological nomenclature. Bull. B. O. C. iii. p. xxxiii.

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499. Exhibition of a Nest and two Eggs of *Ptyonoprogne obsoleta* taken from the smaller rock-temple of Abu Simbel, Upper Egypt. Bull. B. O. C. iv. p. xlii.

500. Remarks on a specimen of the Spotted Redshank (*Totanus fuscus*) living in the Zoological Society's Gardens. Bull. B. O. C. v. p. v.

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501. Exhibition of, and remarks upon, a pair of *Sitta magna*. Bull. B. O. C. vi. p. ix.

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503. Exhibition of, and remarks upon, a Chick of the Crested Screamer (*Chauna cristata*). Bull. B. O. C. vi. p. xxi.

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510. Remarks on *Genyornis newtoni*. Bull. B. O. C. vi. p. xxxii.

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512. On the egg of *Hylactes megapodius*. Bull. B. O. C. vii. p. xxiii.

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516. Nesting of the Spoonbill in Holland. Bull. B. O. C. viii. pp. x–xi.

517. *Calliste pretiosa* in Argentina. Bull. B. O. C. viii. p. xxiv.

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520. On a hybrid Game-bird. Bull. B. O. C. viii. p. li.

521. *Larus atricilla* from Santa Lucia, West Indies. Bull. B. O. C. viii. p. lix.

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527. On the Irruption of Nutcrackers into Holland and Germany. Bull. B. O. C. xi. p. 48.

528. On the nesting of *Merops ornatus.* Bull. B. O. C. xi. p. 48.

529. Birds observed on a trip to Asia Minor and Turkey. Bull. B. O. C. xii. pp. 18–19.

530. On the supposed occurrence of *Accipiter nisus* in Cape Colony. Bull. B. O. C. xii. p. 39.

1902.

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532. Remarks on two lately described Australian birds. Ibis, 1902, pp. 608-610, pls. xiv., xv.

533. On new and rare species of Australian birds. Bull. B. O. C. xii. pp. 50–52.

534. On *Phyllomyias salvadorii* from Tucuman. Bull. B. O. C. xii. p. 52.

535. On a living specimen of *Tichodroma muraria.* Bull. B. O. C. xii. p. 64.

536. On birds obtained by the exploring ship 'Discovery.' Bull. B. O. C. xii. pp. 64–65.

537. On the occurrence of *Porphyrio poliocephalus* in Hampshire. Bull. B. O. C. xiii. pp. 17–18.

538. On *Sphenura broadbenti*. Bull. B. O. C. xiii. p. 23.

539. On a living specimen of *Paradisea apoda*. Bull. B. O. C. xiii. pp. 23–24.

1903.

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541. Account of a trip to the Mediterranean. Bull. B. O. C. xiii. pp. 65–68.

542. On *Otis barrovii* in the Transvaal. Bull. B. O. C. xiv. pp. 24–25.

543. On the occurrence of *Cyanicterus venustus* in Amazonia. Bull. B. O. C. xiv. p. 31.

544. On the generic name *Ixoreus*. Ibis, 1903, p. 142.

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546. Exhibition of rare species of Australian birds, on behalf of Mr. A. J. North. Bull. B. O. C. xv. pp. 8–10.

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549. On a rare Passerine bird from New Guinea. Ibis, 1904, pp. 373–375, pl. ix.

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550. Remarks on Schæffer's Museum Ornithologicum. Ibis, 1905, pp. 85–88.

551. Breeding of *Chauna cristata* in captivity. Ibis, 1905, p. 143.

552. Nesting of *Irrisor viridis*. Bull. B. O. C. xv. p. 40.

553. Dubus's Hawk-Eagle on the Zambesi. Bull. B. O. C. xv. pp. 67–68.

554. On the birds collected by Mr. Lionel E. Taylor in the Transvaal, Bull. B. O. C. xvi. pp. 5–7.

555. On a new species of Bunting from the Syrian Desert. Bull. B. O. C. xvi. p. 39.

556. On the generic name for the Nightingale. Bull. B. O. C. xvi. pp. 39–41.

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557. On some Birds collected by Mr. Douglas Carruthers in the Syrian Desert. Ibis, 1906, pp. 307–317, pl. xv.

558. Note on *Emberiza citriniventris*. Ibis, 1906, p. 612.

559. Nesting of *Irrisor viridis* in Natal. Bull. B. O. C. xvi. pp. 48, 63.

560. On the capture of fish by tame Cormorants. Bull. B. O. C. xvi. pp. 48–49.

561. Occurrence of the Red-breasted Goose in Holland. Bull. B. O. C. xix. p. 21.

562. On birds from south-east Rhodesia. Bull. B. O. C. xix. pp. 29–31.

563. Picariæ, fam. *Coliidæ*, in Wytsman's "Genera Avium," 6th part, pp. 1–6, 1 plate. Brussels, 1906. 4to.

1907.

564. The Ostrich-Farm at Matarieh, Egypt. Ibis, 1907, pp. 512–513.

565. On the breeding places of the Spoonbill in Holland. Bull. B. O. C. xix. p. 38.

566. On birds observed during his excursion to Egypt. Bull. B. O. C. xix. p. 70.

567. On the birds observed at St. Catherine's Lighthouse. Bull. B. O. C. xxi. pp. 19–20.

568. Remarks on a supposed new British Tit of the genus *Parus*. British Birds, i. pp. 23–24.

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569. Remarks on a collection of Birds from the Sikhim Himalayas. Ibis, 1908, pp. 116–117.

570. On the breeding of *Glareola pratincola* in Natal. Bull. B. O. C. xxi. p. 48.

571. *Paradisea apoda* in the Zoological Gardens. Bull. B. O. C. xxi. p. 49.

572. On the Loche collection of Algerian birds. Bull. B. O. C. xxi. p. 85.

573. Notes on *Agapornis lilianæ* and *A. nigrigenys*. Bull. B. O. C. xxiii. p. 49.

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574. Increased fertility of the Domestic Fowl. Ibis, 1909, pp. 192–193.

575. Remarks on the practice of attaching "Authorities" to the scientific names of animals. Ibis, 1909, pp. 347–350.

576. A short history of the British Ornithologists' Union. Ibis, Jubilee Supplement Vol. 1909, pp. 19–64.

577. Note on the Black-faced Love-bird (*Agapornis nigrigenis*). Bull. B. O. C. xxv. p. 11.

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579. Revised list of the Birds of Jamaica in the "Handbook of Jamaica for 1910," pp. 596–619. Kingston, Jamaica, 1910. 8vo.

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1912.

581. The Shoe-bill in the Regent's Park. Ibis, 1912, pp. 686–688, 1 fig.

1913.

582. Commentary on the new "Hand-list of British Birds." Ibis, 1913, pp. 113–127.

THOMAS AYRES.

We learn with regret from the 'Natal Witness' of August 2, of the death at Potchefstroom in the Transvaal, on July 31 last, of Mr. Thomas Ayres at the advanced age of 85 years.

Mr. Ayres was born in England, but went to Natal with his family when quite young. Developing a taste for natural history, and especially for ornithology, he became known to John Henry Gurney through Dr. Colenso, the Bishop of Natal.

As a result there appeared in the early volumes of the 'Ibis,' from 1859 to 1864, a series of papers written by Mr. Gurney containing excellent and valuable field-notes by Mr. Ayres on the birds of Natal, collected chiefly in the neighbourhood of Pinetown, a few miles out of Durban, where Ayres then lived.

Subsequently, about 1869, he moved into the Transvaal and settled at Potchefstroom, and thence communicated to 'The Ibis,' through Mr. Gurney, another series of papers on the "Birds of the Transvaal Republic," which extended over the years 1869 to 1886.

The collection of birds' skins on which these papers were based were all sent to Mr. Gurney, and they are now divided between the British and Liverpool Museums, while the Birds of Prey are at the Norwich Museum.

In 1888 he was chosen an Honorary Member of the B.O.U., and about the time of his death he was, with the exception of Prof. Finsch, the oldest on the list.

Though Ayres was not what would be called nowadays a scientific ornithologist, his notes show that he was a keen and excellent observer, and he was certainly a good collector. The papers on the avifauna of Natal and the Transvaal form the basis of our knowledge of the birds of those regions and have been largely drawn upon by all subsequent writers.

JAN WILLEM BOUDEWYN GUNNING.

DR. GUNNING, who had only this year been elected a Member of the Union, died rather suddenly on the 23rd of June last at his residence at Pretoria.

He was born at Hilversum in Holland on the 3rd of September, 1860, and was educated at the Universities of Amsterdam, Leyden, and Jena, taking the degree of M.D. at the last-named. He went to South Africa in 1884 and practised medicine in the Orange Free State until 1892, when he was appointed Director of the newly formed Museum at Pretoria. Here his energy and enthusiasm found full scope, and he not only established and built up the Museum but founded the Zoological Gardens, of which he was also made Director.

Dr. Gunning was one of the most prominent supporters of the South African Ornithologists' Union from its first start. He was a Vice-President and, for the three years previous to his death, the President of that body. His scientific publications include several papers containing descriptions of new South African birds, and, in conjunction with Mr. A. Haagner, he prepared a check-list of the birds of South Africa which was issued in 1910 as a special supplement of the 'Annals of the Transvaal Museum.'

An enthusiastic and untiring worker in the cause of his Museum and Zoological Gardens, Dr. Gunning's premature death is a great loss to zoological science in South Africa.

XXXV.—*Notices of recent Ornithological Publications.*

Bryant on the Economic Status of the Meadow-Lark.

[Investigation of the Economic Status of Non-Game Birds. By H. C. Bryant. Pp. 1–20, figs. 1–8. Sacramento, Cal. (State Printing Office), n. d. 8vo.]

[The economic value of the Western Meadow-Lark in California. By Harold C. Bryant. Bulletin no. 236 of the Agricultural Experiment Station, College of Agriculture of the Univ. of California. Pp. 1–16. 1913. 8vo.]

Mr. Bryant has recently taken up the question of the economic importance of various non-game birds in California from the point of the farmer, and while in the first of these pamphlets he gives a general account of his methods of investigation, in the second one he discusses the alleged depredations of that well-known favourite the Western Meadow-Lark (*Sturnella neglecta*). Field investigation has shown that this species on occasion destroys sprouting grain, boring down into the ground beside the young plant and extracting the seed from the ground. This is especially the case with oats, which are grown in large quantities in the great central valley of the State.

On the other hand, Mr. Bryant shows that 60 per cent. of the food of the year consists of animal matter, and that this is almost entirely made up of insects injurious to crops, and that when a balance is struck there remains no doubt that the bird deserves protection for the benefits which it confers on agriculture, while the damage done to the sprouting grain can be largely minimised by planting more deeply and drilling instead of broad-casting the seed-grain.

Bucknill on Cyprus Birds.

[Natural History and Sport in Cyprus. By John A. Bucknill, K.C., M.A., M.B.O.U. Forming Part VII. in the 'Handbook of Cyprus,' 1913.]

Mr. Bucknill has here reprinted his list of the birds of Cyprus, 299 in number, from the articles in 'The Ibis' for 1909–1911. To this he has added an interesting historical account of our knowledge of Cypriote Zoology from mythical and classical times onward, and lists of the mammals, reptiles, insects, and other groups known to inhabit the island beloved by Aphrodite.

Bureau on the Red-legged Partridge.

[L'Âge des Perdrix. ii.—La Perdrix rouge. Par Dr. Louis Bureau. Pp. 1–143, 54 figs. Nantes (Vié). London (Williams & Norgate). 1913. 8vo.]

Our foreign member, Mr. Louis Bureau, who is the Director of the Natural History Museum at Nantes, has continued his investigation on the moult of the remiges of the Partridges and on the possibility of the exact determination of the age of the young bird by an examination of the condition of the wing. His first contribution, published in 1911, dealt with these conditions in the Grey Partridge (*Perdix perdix*), the present one with those in the Red-legged (*Caccabis rufa*). His method for the determination of the age of the bird is based on the observed regularity of the moult of the ten wing primaries of the first plumage. This commences in August, at the average age of 29 days, with the moult of the 10th primary; the others in regular order up to the 3rd are successively shed, the average age for the last-named being 105 days, while the first and second (the outermost of the wing) are not moulted until the second autumn (*i.e.* when the bird is about 16 months old).

It is therefore possible to determine the age of the young Red-leg by finding out which feather of the first plumage has been last moulted and measuring the new feather of the second plumage immediately behind it, and comparing this with the "tableau chronométrique" given on p. 74.

The observations on which these conclusions are founded in the case of both species have been continued over twelve to thirteen years, and are all based on wild-killed birds the ages of which have been determined by close observation of the time of hatching. It is found that the moult of the Red-leg takes place more slowly than that of the Grey, and the average age for its completion is 105 as against 86 days.

It is not possible to go more fully here into the observations and into the results contained in this very careful piece of work, which is a grand example of the logical method and clearmindedness of the French intellect, and we can strongly recommend all who are interested in the scientific study of moult, as well as breeders and others who wish to be able to fix the age of game-birds, to read the work in the original French.

Cory on new Neotropical Birds.

[Descriptions of twenty-eight new Species and Subspecies of Neotropical Birds by Charles B. Cory. Publ. Field Museum of Nat. Hist., Ornith. ser. vol. i. 1913, pp. 283–292.]

The greater number of the new forms here described were collected by Mr. N. Dearborn in 1908, and by Mr. W. H. Osgood in 1911, in Venezuela and Colombia. One new species—*Urochroma costariensis*—was obtained in 1910 near Limon in Costa Rica, by H. F. Raven; while in 1912 Mr. Osgood was collecting in Peru, whence came another new species—*Laticauda rubriginosa*—from an altitude of 10,000 feet.

We presume that Mr. Cory will give some further account of these collections at a later date.

Dewar's Sketches of British Birds.

[Wild Birds through the Year. By George A. B. Dewar. Pp. xii+248, 8 photo-plates. London (Herbert Jenkins). 1913. 8vo.]

This is a series of short chatty popular sketches on British Birds, many of them reprinted apparently from daily and weekly journals. Though containing little that is novel they form pleasant reading. The observations seem to have been made chiefly in Hampshire and other southern English counties. The work is illustrated by eight reproductions of photographs by various artists, though some of these do not seem to have any very obvious connection with the text.

Grinnell's List of Californian Birds.

[A Systematic List of the Birds of California by Joseph Grinnell. Cooper Ornithological Club. Pacific Coast Avifauna. Number 8. Pp. 1–23. Hollywood, California, 1912. 8vo.]

This is a formal list of the birds of California, based on the latest information available, but without any further indication as to status or distribution within the State. The only novel feature is in the classification or arrangement which, contrary to the usual methods employed in the United States, is not that of the A. O. U. Check-list, but is "almost identically that based chiefly upon Gadow and presented by Knowlton" in his 'Birds of the World' (New York, Holt, 1909).

Hagen on the Birds of Lübeck.

[Die Vögel des Friestaates und Fürstentums Lübeck, von Werner Hagen. Pp. iv+166. Berlin (Junk). 1913. 8vo.]

This work contains a systematic account of the avifauna of the Free-State of Lübeck and its adjoining Principality, which lie along the coast of the extreme south-west corner of the Baltic. The population is considerable and increasing, and the changes brought about by advancing cultivation, modern methods of forestry, and the spread of towns and suburbs have had the usual result of the gradual extinction of the larger and wilder species. No Wild Goose now breeds within its limits, nor Crane, nor Black Stork, although they all formerly did so. Herr Hagen has therefore thought it well to bring together all the past records and present condition of the avifauna, and here presents it under the auspices of the German Ornithological Society.

The species enumerated number 267, and following this are some appendices devoted to aberrations and monstrosities, to migration and to bird protection in the districts treated of.

Hudson's Adventures among Birds.

[Adventures among Birds. By W. H. Hudson: with a portrait. London (Hutchinson). 1913. 8vo.]

In his new volume Mr. Hudson is chiefly occupied with his wanderings about England during last year in search of rare songsters. One of his favourite haunts is Wells-next-the-sea on the coast of Norfolk, where there is a combination of sand-hills, pine-wood, green marsh, and saltings, and where the Wild Grey Geese come in in great numbers from the north, finding sanctuary in the wide meadow-lands lying between Wells and Holkham. Here, also, are Hooded Crows, which roost in the pine-woods extending from Wells towards Holkham, and many other interesting birds to be watched. Other chapters deal with the Peak district, with the flat green Somersetshire country near Glastonbury, and with an unnamed Hampshire village, where Mr. Hudson was so fortunate as to discover a number of Dartford Warblers, or, as he terms them, Furze-Fairies, nesting.

There is an elusive charm about all Mr. Hudson's writing, and this volume gives as much pleasure for its literary style as for the observations recounted. His bête-noir is the gamekeeper and his master the "Millionaire Landed Proprietor" who have between them destroyed so much of the Accipitrine and the larger bird-life of England in their efforts to raise a good head of pheasants and other game. But, on the other hand, it must be remembered that many of our larger birds, such as the Golden Eagle and the Kite, have only been preserved to us by the unremitting care of some our larger land-owners, and that England, at any rate, considering its population and restricted area, shews up very well as compared with continental countries, or even America, as regards the numbers of birds to be seen about the countryside, and this is almost certainly due to the land being held by large land-owners and not by small peasant-proprietors.

Mathews on Australian Birds.

[The Birds of Australia. By Gregory M. Mathews. Vol. iii. pt. 2. Pp. 105–204, pls. 138–150. London (Witherby). 1913. 4to.]

Mr. Mathews must find his task becoming somewhat easier now that he has disposed of the intricate synonymy of the Petrels and earlier groups. Still, as he tells us, the Plover and Snipe families present many difficulties, and in the Charadriidæ he finds a clear diagnosis of the Ringed Plover group very hard to formulate. Again, while criticizing the attempts of Sharpe and Ridgway to diagnose the family Scolopacidæ, he says that it almost defies definition. Our author, in consequence, takes the view that a multiplicity of genera and subgenera conduces to clearness.

The genus *Ægialitis* of the British Museum Catalogue (for which he substitutes the name *Charadrius*) is much subdivided. *Leucopolius*, of Bonaparte, is accepted as a subgenus for *Æ. marginatus*, *Æ. pallidus*, *Æ. alexandrinus*, *Æ. nivosus*, *Æ. occidentalis*, *Æ. venustus*. *Æ. collaris*, *Æ. ruficapillus*, and *Æ. peroni*; while two new subgenera are proposed, *Pernettyva* for *Æ. falklandicus* and *Helenægialus* for *Æ. sanctæ-helenæ* and *Æ. pecuarius*.

Then *Paroxyechus* is suggested as a new subgenus for *Oxyechus placidus*, *Afroxyechus* as a new genus for the African species *tricollaris*, *bifrontatus* and *forbesi*, and similarly *Elseya* for the Australian *melanops*.

The descriptions of the habits of the various birds are admirable, and Mr. Mathews lays great stress on the study of oology as affording evidence of affinity: he calls special attention to the frequency of erroneous identification of eggs and corrects two cases of it in the British Museum Catalogue.

In concluding the Charadriidæ, he notes that *Æ. hiaticola* was erroneously ascribed by Gould to Australia, that he is satisfied that *Charadrius rubricollis* of Gmelin was described from a specimen of the Red-necked Phalarope, and that he is *not* satisfied that we know the authentic egg of *Æ. geoffroyi*.

Mr. Mathews sinks his *C. cucullatus torbayi* under *C. c. tregellasi*, his *Elseya melanops marunghi* under *E. m. russata*, and in the following family his *Cladorhynchus leucocephalus rottresti* under the typical *C. leucocephalus*.

In the family Recurvirostridæ, we note that the author replaces *Himantopus* by the older name *Hypsibates*, and gives a new subspecies *H. leucocephalus timorensis* from Timor, while reducing the New Zealand form to another as

H. l. albus. In the Scolopacidæ (where, according to his measurements the female always seems to have the longer bill) he proposes a new genus, *Zarapita*, for *Numenius tenuirostris*, and separates the Whimbrels from the Curlews (as *Phæopus*) on account of their very different relative proportions. So also he makes a new genus *Vetola* for the Bar-tailed Godwits, and here a nice illustration is given of bill and leg for comparison. *Mesoscolopax* is accepted for *Numenius minutus*, and *Iliornis* of Kaup for *Totanus stagnatilis*.

Menegaux on the Ostrich.

[L'élevage de l'Autruche. Récolte et Commerce des Plumes. Par A. Menegaux, Assistant au Muséum National d'Histoire Naturelle. Préface de M. Edmond Perrier, Directeur du Muséum National d'Histoire Naturelle. Pp. 1–156. Paris (Challamel), 1913. 8vo.]

This work forms one of a series of handbooks—bibliothèque d'agriculture coloniale—prepared for the benefit of the French colonists in Algeria, Morocco, and other French possessions.

Although Ostrich-farming has been attempted in many parts of the world—in Algeria, the French Soudan, Madagascar, Arizona, and California—it never seems to have become well established, from a commercial point of view, except in Cape Colony.

It was about the year 1870 that the idea arose among the more enterprising farmers of the eastern portion of Cape Colony of breeding and domesticating these birds on a large scale. So rapidly did the industry spread that whereas in the census of 1865 only 80 tame Ostriches were included, in that of 1875 there were 32,000, while at the present time their numbers have been augmented to upwards of a million birds, yielding annually 741,000 lbs. of feathers, valued at over $2\frac{1}{4}$ millions pounds sterling.

M. Menegaux's account is largely based on a series of papers by Prof. Duerden, of Grahamstown, published in the 'Agricultural Journal of Cape Colony,' and subsequently in that of the Union of South Africa during the years

1907–1912. Prof. Duerden has carried out a number of breeding and other experiments, with a view to improving the quality and quantity of feathers produced, with most happy results, and M. Menegaux here presents this for the benefit of French colonial farmers.

Miller on the Kingfishers.

[A Revision of the Classification of the Kingfishers. By W. de W. Miller. Bull. Amer. Museum Nat. Hist. New York, xxxi. 1912, pp. 239–311, pls. xxv., xxvi.]

In this carefully reasoned paper, Miller proposes to revise the classification of the Kingfishers. Sharpe in his "Monograph of the Kingfishers," published in 1871, recognised two subfamilies only:—

Alcedininæ, including *Rhamphalcyon* (*Pelargopsis*), *Ceryle, Alcedo, Corythornis,* and *Alcyone*.
Daceloninæ, containing all the other genera.

Sharpe's division was based to a great extent on the habits of the bird, the first-named subfamily being largely piscivorous, the second bush-loving and feeding on insects and reptiles.

Miller proposes to recognise three subfamilies:—

Cerylinæ with *Ceryle*.
Alcedininæ with *Alcedo, Corythornis, Alcyone, Ceyx, Ceycopsis, Ispadina*, and *Myioceyx*.
Daceloninæ with *Rhamphalcyon* (*Pelargopsis*), *Halcyon, Dacelo*, and the other Australian Bush-Kingfishers.

The Cerylinæ are characterised by a narrow crest, a moderately long tail, an interrupted dorsal tract, a bare end to the tibia and a long second toe, while the plumage contains no blue and the sexes are alike above, but always different below. This subfamily is found in both hemispheres, but does not extend to the Indo-Malayan or Australian regions.

The Alcedininæ have a flat crest, a very short tail, a continuous dorsal tract, the end of the tibia slightly feathered, and a very short, vestigial or absent second toe, the plumage always has blue in it, and the sexes are almost always alike. They are confined to the eastern hemisphere, only one genus being restricted to the Australian region.

The Daceloninæ have a flat wide crest, a moderate or rather long tail, an interrupted dorsal tract, the end of the tibia feathered, and a moderately long second toe. The plumage contains blue and the sexes are usually different above, rarely so below. This subfamily is practically restricted to the Australian subregion.

Mr. Miller appears to be rather doubtful about the position of the genus *Ramphalcyon* (formerly known as *Pelargopsis*): he considers that it may be more consistent to make a fourth subfamily for its reception. He also points out that the current generic names *Sauromarptis* and *Carcineutis* are antedated by *Choucalcyon* Lesson, 1831, and *Lacedo* Reichenb. 1851.

The second portion of the paper deals more fully with the differential characters of the genera and species of the Cerylinæ. Three genera are recognised—*Ceryle* for *C. rudis* alone, *Chloroceryle* Kaup for *C. amazona* and three other closely allied species confined to the Neotropical region, and *Megaceryle* Kaup, with five species allied to *C. maxima*, found in both hemispheres.

North on the Australian Cassowary.

[On the Early History of the Australian Cassowary (*Casuarius australis* Wall). By Alfred J. North, C.M.Z.S., C.M.B.O.U., Ornithologist. Records Australian Mus. x. 1913, pp. 39–48, pls. viii.–ix.]

The Cassowary of the Australian mainland was first met with by the Kennedy expedition which was sent to explore the country between Rockingham Bay and Cape York in northern Queensland in 1848. Out of eleven persons who composed the expedition only two survived. One of these, Wm. Barron the botanist, described in his narrative the capture of a Cassowary which was shot by an aboriginal—Jackey. This specimen was eaten by the members of the expedition and the skin, which was preserved by Thomas

Wall, the naturalist of the expedition, was afterwards lost. A description of the bird under the name of *Casuarius australis* was published by William S. Wall, the Curator of the Australian Museum, who was the brother of Thomas Wall, based on rough notes and sketches made by the latter, on p. 88 of "The Illustrated Sydney News" of June 3rd, 1854. This account forms the basis of Gould's description (Handbook Bds. Austr. 1865, ii. p. 206).

The photograph which accompanies the present article, though stated to be that of the type, is apparently that of the second example obtained by Mr. G. Randall Johnson near Rockingham Bay in about 1866. This specimen was described by Mr. Krefft, the third curator of the Australian Museum, in the 'Proceedings of the Zoölogical Society' for 1867, under the name *C. johnstoni*, and is now in the Australian Museum.

Robinson on Malayan Birds.

[Notes on Birds new to, or rare in, the Malay Peninsula (Third series). By H. C. Robinson, C.M.Z.S., M.B.O.U. Journ. Fed. Malay States Museum, v. 1913, pp. 15–22.]

Mr. Robinson continues his investigations into the avifauna of the Malay Peninsula and in this short paper comments on several rare species he has recently secured. *Dromas ardeola*, the Crab Plover, has its range extended from the Andamans to Selangor, but no new species are described.

Todd on the Ground-Doves.

[A Revision of the Genus *Chæmepelia*. By W. E. Clyde Todd. Annals Carnegie Museum, viii. 1913, pp. 507–603.]

Mr. Clyde Todd submits the Ground-Doves of the genus *Chæmepelia* to a thorough and exhaustive revision based on the examination of no less than 1920 specimens loaned from the leading Museums and private collections of the United States. He recognises five species, one of which, *C. passerina*, is further separated into sixteen subspecies, and two others have each one subspecies, making 22 in all. Four of these are here discriminated for the first time.

For the species usually known as *Chæmepelia cruziana* Prév. & Knip, a new genus *Eupelia* is provided. As regards *C. passerina,* a Linnean species and the type of the genus, a further change is proposed, and it is worth while perhaps to follow the details of this in order to show the difficulties of the modern taxonomist.

Linnæus in describing his *Columba passerina* in 1758 gives a diagnosis which will suit the Ground-Dove of the southern United States equally well with that of Jamaica and Barbados, all three of which are now regarded as distinct subspecies. Linnæus based his diagnosis on Sloane, Catesby, and Willughby's accounts, whose respective localities were Jamaica, S. Carolina, and Barbados.

Mr. F. M. Chapman in 1892 discussed this matter and came to the conclusion that Jamaica should be accepted as the type locality of Linnæus' species as Sloane's reference was the first, and proposed the name "*terrestris*" for the continental form. Mr. Todd has now discovered that Bonaparte, in a review of the genus published in 1855, distinctly restricted the application of the name "*passerina*" to the continental form figured by Catesby, and claims that this form should be known as *C. passerina passerina* and not *C. passerina terrestris* as proposed by Chapman, while for the Jamaican and Barbadian subspecies the names *C. passerina jamaicensis* (Maynard) and *C. passerina antillarum* Lowe must be substituted.

The ultimate decision of this question must rest we presume with the "checklist" committee of the A.O.U. or with the nomenclature committee of the International Zoological Congress. So far as we are aware, there is no definite rule laid down in the code dealing with a case of this sort. It seems, however, a safer method to follow Chapman's method, as this leads more surely to a final decision, rather than Mr. Todd's, whose conclusions may be presently upset by the discovery of a reviser previous to Bonaparte.

Zitkov on Birds from the Yamal Peninsula.

[B. M. Zitkov. Les oiseaux de la presqu 'ile de Yamal. Avec Pl. xi. et 9 fig. dans le texte. Annuaire des Musée Zool. de l'Académie Imp. des Sciences de St. Pétersbourg, xvii. 1912, pp. 311–369. Russian.]

We can do little more than draw the attention of any of our readers who understand Russian to this memoir, which deals with the birds of the Yamal or Yalmal Peninsula, a desolate region extending northwards into the Arctic seas at the north-west corner of Siberia near the mouth of the Obi River. Only eight passerine birds are mentioned, but this is compensated for by the number of swimming and diving birds. No new species or subspecies are described, and the article is accompanied by some photographs of nests and eggs.

A new Check-list of Australian Birds.

[Official Check-list of the Birds of Australia. By Check-list Committee, Royal Australasian Ornithologists' Union. Adopted at Launceston, 19th November, 1912, with Report. Pp. 1–116. Melbourne (Walker, May & Co.), 1913. 8vo. Also as Supplement to 'The Emu,' vol. xii. Jan. 1913.]

The appearance of the long-expected 'Official Check-list of the Birds of Australia' must be an important event in the history of the ornithology of that country, more especially as it is the result of ten years' labour on the part of the Committee appointed by the Royal Australasian Ornithologists' Union.

It is therefore disappointing, in view of the progress of ornithological science and research, to find that the Committee should have considered it a reasonable proposition to discard the labours of recent workers and endeavour to propose a "new nomenclature," based upon that utilised in part by John Gould from 1837–1865. The preface drawn up by the Committee to explain their action is most unconvincing, and many statements made are hardly accurate. As a nomenclature to be employed by a conservative body of local workers it might be recommended, but no further usage is possible.

It is somewhat astonishing to realise that *each* member of the Committee had written lengthy papers and books based upon the nomenclature utilised in the 'Catalogue of Birds of the British Museum,' yet collectively the Committee has approved of the rejection *in toto* of the advances made by the authors of these volumes upon Gould's work. Though steadfastly maintaining that no disturbing innovations should be permissible, the Committee have produced quite a novel list of names, resurrecting many Gouldian names which have been consistently in disuse for the last thirty to forty years.

It is impossible to recommend the list to the use of present-day workers, as no synonymy is given, and names are apparently used for species with which they have been shown to have no connection. Subspecies are rarely included as such, but in most cases the List shows that the Committee do not understand the term "subspecies" as it is now commonly interpreted. Trinomials are not utilised, as it was concluded their use would "endanger its (*i. e.* ornithological study) existence in Australia." After many years' delay the leading Ornithologists of Britain have now concluded that it is impossible to withstand the progress of the trinomial method of naming birds, and the List now being prepared by the Select Committee of the British Ornithologists' Union will include subspecies named trinomially. It will thus be seen that Australians will now stand alone in rejecting trinomialism, but as Mathews, in his current work on the 'Birds of Australia,' makes full use of this system, the younger progressive element in Australian ornithology will no doubt refer to his work for a better understanding of their birds in connection with those of other countries. A few points illustrative of the preceding criticism may be appended. The Committee report that they dealt with the validity of species and they state: "During the evenings of the winter months they did so"; in the present state of ornithological science it is impossible to determine the validity of subspecies in winter evenings, so that it is easily understood why such were not recognised: the difficulty is to understand how some of the "subspecies" admitted were separated under such circumstances.

The Committee further state "the specific . . . names of John Gould have been in current use for sixty years," and they include as such *Strepera anaphonensis* Temminck, which was rejected in the 'Catalogue of Birds of the British Museum' in 1877 and is now first utilised in scientific work since that date, in the present List.

It is well known to ornithologists that Gould's names have been continually under revision since 1865, the first and commonly accepted taking place in 1877, only twelve years after Gould's book was published, when Ramsay put forward his first list; this was followed by his Tabular List in 1888. Subsequent revisers have been Hall, one of the present Committee, who in 1899 based his list upon the 'Catalogue of Birds in the British Museum'; this nomenclature was also accepted by Campbell (another of the present Committee) in his monumental 'Nests and Eggs of Australian Birds,' whilst North in his similarly named work has also based his names upon that series of Monographs.

The Committee have not rejected preoccupied names, neither have they accepted legitimate corrections save in an erratic indeterminable manner. A good instance is the retention of *Malurus longicaudus* Gould for the Tasmanian Blue Wren Warbler, and *Malurus cyaneus* Ellis for the Mainland Blue Wren Warbler. It is well known and indisputable that Ellis named a bird from Adventure Bay, Tasmania, which is undoubtedly the same as the one which Gould named *Malurus longicaudus*; moreover, this name is preoccupied by Temminck. These points have been undisputed since 1873, when Pelzeln first pointed them out.

In conclusion, it can only be reiterated that the Official Check-list can be regarded merely as an expression of the conservative views of the older school of Australian ornithologists, and not as a useful index to the state of ornithological science in Australia.

A new Dutch Ornithological Club.

[Club van Nederlandsche Vogelkundigen. Jaarbericht, No. 2. Pp. 1–132. Deventer (Kluwer), 1912. 8vo.]

Every year the clubs and societies exclusively devoted to the study of ornithology increase in number, and we now have to announce the formation of a new one in Holland whose second 'Yearbook' we have lately received. The president and moving spirit appears to be Baron Snouckaert van Schauburg, who contributes an article on the rarer birds which have come to his notice in Holland between May 1911 and April 1912. Mr. P. H. Hens, the Secretary of the Club, writes on the birds of the neighbourhood of Roermond, and Mr. C. Eykman on those of the south-western part of Utrecht province, while from outside Holland Mr. W. C. van Heurn contributes some notes on his ornithological experiences in Surinam and Baron Snouckaert on a collection of birds from Palestine.

The Emu.

[The Emu. A Quarterly Magazine to popularize the study and protection of native birds. Vol. xii. July 1912 to April 1913.]

The last volume of the 'Emu' fully sustains the reputation of the past and contains a number of papers dealing with every aspect of Australian ornithology. Capt. S. A. White gives an account in four articles of his ornithological collecting trips recently undertaken in various districts of South Australia. The results of these have been presented to Mr. Mathews to assist him in the completion of his work on the 'Birds of Australia.' So far the districts visited by Capt. and Mrs. White have been the Eyre Peninsula, Port Augusta, the Mallee of the lower Murray, Lakes Albert and Alexandrine, up the mouth of the Murray, Cape Jervis and Kangaroo Island. Other articles containing interesting field-notes are by Mr. F. E. Wilson on the birds and eggs of the Mallee country in the north-west of Victoria, by Mr. S. W. Jackson, who travelled to a spot on the Moonie river on the New South Wales–Queensland border in search of the nests and eggs of the Spotted Bower-bird (*Chlamydodera* *maculata*). This article, which is illustrated by a number of beautiful photographs of the haunts, the playgrounds or bowers, and of the nests, eggs and young of the Bower-bird, is of special interest, and from it can be obtained a very complete account of the habits of these interesting birds. Mr. G. F. Hill sends some notes on the birds met with on a journey from Oodnacatta in South Australia northwards through the heart of the continent to the Gulf of Carpentaria.

New species of Australian birds are described as follows :—*Ptilonorhynchus minor*, p. 19, Herberton ranges, Queensland ; *Ptilotis carpentariensis* p. 19, Burketown, Queensland ; *Ptilotis subchrysops*, p. 19, Cooktown, Queensland, all by Mr. A. J. Campbell ; *Falco melanotus*, *Megalurus flindersi*, and *Sericornis flindersi*, pp. 164 and 165, described by Messrs. White and Mellor, from Flinders Island in Bass Straits. The last two of these are described as "subsp. nov.", but no indication is given of the species of which they are considered to be the sub-species and the descriptions are not comparative ; no type is named, nor is the number of specimens obtained or compared given. Such slipshod methods as these are bringing systematic ornithology into great disrepute and we must protest against them. Mr. Dodd of Nelson in northern Queensland, describes *Cacomantis lineatus* (p. 165) from a single female, Mr. Mellor *Amyntornis merrotsyi* (p. 166) from near Lake Torrens in Central Australia, and Mr. Milligan *Acanthiza pygmæa* (p. 167) from the Mallee district of Victoria. Finally Messrs. Campbell and Kershaw describe *Amytornis rufa* (p. 274), from Northern Territory.

Other articles of special interest are on the breeding-habits of *Gygis candida* in the Kermedec group, by R. S. Bell, on the internal parasites of Australian birds, by T. H. Johnston, and on the osteology of *Cereopsis novæ-hollandiæ*, by Dr. Shufeldt of Washington, U.S.A.

A supplementary number of the present volume contains a new official check-list of Australian birds, in regard to which a notice will be found on p. 699.

Journal of the Ornithological Society of Kief.

[Travaux de la Société ornithologique de Kief du nom de K. Th. Kessler, sous la rédaction du président de la Société, V.-M. Artobolevski. Vol. i. Livrais. i. pp. 1-320. Kief, 1913.]

This makes another addition to the rapidly increasing number of Ornithological periodicals. It is published at Kief in south-west Russia and is in the Russian tongue, though the title-page and table of contents are also in French and there is a short summary of two out of the three articles in the same language.

M. E. Charlemagne describes a new subspecies of Oyster-Catcher, *Hæmatopus ostralegus borysthenicus*, from the valley of the Dnieper, differing from the typical form in its greater size and longer beak and tarsus. In a second paper he writes on the irruption of the Siberian Nutcracker (*Nucifraga caryocatactes macrorhynchus*) in European Russia during the autumn of 1911. The greater part of the number, however, is occupied in a systematic account of the Avifauna of Colchis and Adzaria, or Abkhasia as it is spelt in English maps, a province lying on the southern slopes of the Caucasus and between those mountains and the Black Sea.

Other Ornithological Publications received.

Dabbene, R., et Lillo, M. Description de deux nouvelles espèces d'Oiseaux de la Rép. Argentine. (Anales Mus. Nac. Hist. Nat. Buenos Aires, Tom. xxiv., 1913.)

Gyldenstolpe, N. Birds collected by the Swedish Zool. Exped. to Siam, 1911-1912. (K. Svenska Vet. Handl. Bd. 50, No. 8. Upsala, 1913.)

Heatherley, F. The Peregrine Falcon at the Eyrie. ('Country Life' Library, 1913.)

Laurie, D. F. Official Report of Egg-laying Competitions, 1912-13. (S. Aust. Dept. Agric., Adelaide, 1913.)

Mathews, G. M. The Birds of Australia. (Vol. iii. pt. 3, 1913.)

North, A. J. Nests and Eggs of Birds found breeding in Australia and Tasmania. (Vol. iv. pt. 2. Sydney, 1913.)

Annuaire du Musée Zoologique de Imp. Acad. Sciences St. Pétersbourg. (Vol. xvii. Nos. 3 & 4, 1913.)

The Auk. (Vol. xxx. No. 3, 1913.)
The Austral Avian Record. (Vol. ii. No. 1. 1913.)
Avicultural Magazine. (3rd Series, Vol. iv. Nos. 9–12, 1913.)
Bird Notes. (New Series, Vol. iv. Nos. 7–9, 1913.)
British Birds. (Vol. vii. Nos. 2–4, 1913.)
The Condor. (Vol. xv. Nos. 3, 4, 1913.)
The Emu. (Vol. xiii. pt. 1, 1913.)
Field Museum of Nat. Hist. Ann. Report of the Director for the Year 1912. (Chicago, 1913.)
Irish Naturalist. (xxii. Nos. 7–9, 1913.)
Journ. f. Orn. (Vol. 61, Heft 3 & Sonderheft 1, 1913.)
Journal of the S. African Ornithologists' Union. (Vol. ix. No. 1, 1913.)
Orn. Jahrbuch. (Vol. xxiv. Heft 3, 4, 1913.)
The Scottish Naturalist. (Nos. 19–21, 1913.)
Victoria, R. Zool. & Acclim. Soc. 49th Annual Report (1912). (Melbourne, 1913.)
Zoologischer Anzeiger. (Bd. xlii. Nos. 5–10, 1913.)

XXXVI.—*Letters, Extracts, and Notes.*

We have received the following letters addressed "to the Editor":—

Sir,—Last year, when working out a collection of birds from Yunnan, I made a very careful examination of all the specimens of the various forms of *Prinia inornata* Sykes, contained in the Tring and British Museums. In reviewing the different forms of this species in the 'Novitates Zoologicæ,' vol. xix. p. 299 I drew attention to the fact that the bird inhabiting Yunnan and Upper Burma as well as that found in Formosa diverged somewhat from the typical *Prinia inornata extensicauda* Swinhoe, from Amoy, but as many of the older specimens lacked precise data, I refrained from describing them. Since then Major H. H. Harington, with additional material of his own, has named both birds (Bull. B. O. C. vol. xxxi. p. 111), calling the former *P. i. burmanica* and the latter *P. i. formosa*. It seems to me that in only referring to the colours of their plumage he has missed their most striking characteristics, namely, the difference in the size of their bills.

In the work referred to above (apparently overlooked by Major Harington) I remarked that "birds from Yunnan and Upper Burma have very small bills; on the other hand, those from Formosa—as Swinhoe pointed out (Ibis, 1863, p. 299 —are 'rather larger,' and possess 'usually more robust bills.' They all agree, however, in having the back generally greyer and more olivaceous than *P. inornata*."

I am, Sir,
Yours &c.,
COLLINGWOOD INGRAM.

Westgate-on-Sea, Kent.
July 16th, 1913.

SIR,—In the Messaorea plain, within the Famagusta District of Cyprus, and about twelve miles from the sea, a large reservoir was made some few years ago near a village called Kouklia, for the double purpose of draining marshy land and of storing water for irrigation purposes in the dry season.

This reservoir is a large sheet of water covering an area—if the rains have been normal—of about 1½ square miles in the spring and early summer. During the summer and autumn, owing to evaporation and to the using of the water for irrigation, the reservoir is of lesser extent, and in some years when the winter rain is late it becomes nearly dry.

Usually in the winter this place is the haunt of great quantities of wild fowl, Grebes, and Waders, and in the spring a great many migratory birds rest there for a time on their way to Asia Minor and further north.

In 1909 it was known that the *Podiceps nigricollis* and *Podiceps fluviatilis* frequented this reservoir, and the first specimens of the former Grebe were obtained; the Lesser Grebe had been met with before.

In the following year I obtained a specimen of the Great Crested Grebe (*Podiceps cristatus*), and their eggs were obtained at the same time, also the eggs of the Lesser Grebe. No eggs of the Eared Grebe, however, were found.

On the 1st of June last, when with a friend I was following the reedy edges of this reservoir, my attention was drawn to a small rushy islet of quite a few yards in extent by a Stilt that hovered over it and was evidently disturbed by my proximity to it. I waded to the islet through about two feet of water and found the Stilt's nest on it and five Eared Grebes' nests floating in the bordering rushes. All the nests had eggs.

There was a similar islet about ten yards off, and I noticed the glistening of eggs on the water about ten yards or so from it on the open. I waded across and found a chain of five more Eared Grebe's nests on the water-weed in the shallow water, about one foot in depth, and quite in the open. One nest was under water, and the two eggs in it were immersed. On going to the islet I found five more nests just outside it in the open, and I found three more nests floating in the rushes on the edge of the islet. All the eighteen nests had eggs in them; one nest only had four eggs in it, one had three eggs, and the remaining sixteen other nests had either two or one egg in them. All the nests were composed principally of water-weed, and the ten nests in the open were floating on the top of the growing water-weed. Only two nests had the eggs concealed by weed being placed over them.

It was rather a curious fact that although I had followed the bank of the reservoir for a good distance, I never saw a single parent bird, though usually a number are visible, and I have had no difficulty in obtaining specimens.

The eighteen nests were within a circle of thirty yards, roughly speaking.

I am, Sir,
Yours &c.,
Francis R. S. Baxendale.

Milgate Park,
Bearsted, Kent,
August 4th, 1913.

The Undulatory Flight of Humming-Birds.—Mr. Robert C. Murphy, of the Brooklyn Museum, New York, sends the following account of some observations made by him on the migration flight of Humming-Birds in the West Indies:—

"During the summer of 1912 I spent several weeks on ship-board in the vicinity of Dominica and Martinique, West Indies, and in the strait between the two islands there were several opportunities for observing the flight of a Humming-Bird (which I believe to have been *Sericotes holosericeus*) under unusual and favourable conditions.

The first instance was on July 14th. At noon we lay midway in the strait, about nine miles from either island. The north-east trade-wind was blowing strongly, bringing frequent showers of rain, hence I was rather surprised to see a Humming-Bird pass, flying across the wind and in the direction of Martinique. On the afternoon of the same day a second flew by close to the ship. Both of these birds were flying about twelve feet above the water. In the early morning of July 17th, I saw a third, thirty or forty feet up in the air, and this time only about two miles from Dominica, toward which the bird was heading. On July 22nd, in calm weather, when we were not less than seven miles off the Martinique coast, a fourth hummer approached and seemed about to alight in our rigging, but suddenly veered and made off in the direction of Dominica. On the 24th a fifth was seen, flying only a few inches above a calm sea. The next day, when we were probably fifteen miles off the windward coast of Dominica, the nearest land, the sixth passed us, and, finally, on July 28th, when the trades were so strong that we were tacking under reefed sails, the seventh Humming-Bird flew vigorously past in the teeth of the wind.

The noteworthy feature as regards all of these Humming-Birds, aside from the obvious fact that they habitually make reckless journeys over a sea much given to squalls, was the *undulatory* character of their flight. In their natural habitat ashore, birds of this same genus, as well as other *Trochilidae*, appear to me to fly from one point to another, in an almost mathematically straight line, sustaining themselves with practically synchronous vibrations of the wings. But here, over the open sea, when the birds were flying straightaway for considerable distances, a rythmical rise and fall was unmistakably apparent. The dip of the body, though less noticeable than in the flight of many Passerine birds, was nevertheless regular, and occurred, as nearly as I could judge, at intervals of about one second."

The Peruvian Guano Islands.—Dr. H. O. Forbes, M.B.O.U., the ornithologist appointed by the Peruvian Government to investigate the question of the guano deposits in the islands off the coast of Peru, has lately returned to England. The diminution in the quantity of guano had occasioned disquietude to agriculturists and it was decided to ascertain, if possible, the cause of the decline, which has been going on for some time. It so happened, however, that just before Dr. Forbes's arrival in Peru, which was early in January, 1912, a very remarkable incident occurred. For some reason, at present unaccounted for, in November, 1911, almost the whole of the birds on certain islands forsook their nests and newly-hatched young and did not return. Millions of nests containing many millions of dead birds were thus forsaken. Shocks of earthquake are not uncommon in these islands, and the birds which live there are always greatly alarmed when such disturbance occurs. They rise and wheel about in much agitation, exhibiting every evidence of the fear which the convulsions occasions in them. Dr. Forbes, after rejecting other and unsatisfactory theories, surmises that an exceptionally severe shock may have caused the birds in this instance to take the extremely uncommon course of forsaking their young. No one could say in what direction they migrated. His own belief is that they went north to the Galapagos Islands, but he was unable to verify this impression. The birds disappeared for three months and although they began to return in February and March, 1912, they did not resume breeding at that time, and practically the guano of that season was lost, because a very large amount of the deposit takes place during the breeding season.

The guano islands lie all along the coast of Peru, beginning with the Lobos Islands in the north and extending down the coast to a point opposite Mollendo in the south—a distance of more than 1000 miles. When Dr. Forbes first arrived there was hardly a bird to be seen on the islands. For certain reasons his investigations were delayed until late in 1912, when he was invited by President Billinghurst to make suggestions as to the best means of increasing the guano supply. The President placed a small motor-boat at his disposal, and he visited the whole of the coast from the boundaries of Peru and Chile as far as the northern boundary. He investigated all the islands and roosting rocks along that coast, and was able to make suggestions as to their utilization in such a way that more guano might be collected on them.

There are about eight species of birds which are valuable as guano producers. The most important of these is Bougainville's Cormorant (*Phalacrocorax bougainvillii*), whose chief nesting-place is the Chincha Islands. On the middle one of these islands there were breeding in the month of February some ten million birds, sitting in the closest proximity to each other. This is one of the most wonderful bird sights to be seen in the world. The going and coming of these birds is a marvellous spectacle, and the noise which they make is hardly less remarkable. Their instinct in finding their nests is also extraordinary, for though they are constantly going and coming they never make a mistake. One bird sits on the nest while the other is feeding, and is relieved in turn by its mate. At times the noise is just like the sough of the sea and at others it resembles the sound of a great crowd, all the members of which are talking at once. When they leave their nests to feed, the Bougainville's Cormorants start for their fishing-grounds at five or six in the morning and fly in a broad stream 20 or 30 yards in breadth, which often continues without interruption till one o'clock in the day. They settle on some place where fish is abundant and form immense islands on the sea a mile or so in diameter. Wide areas are covered by them, and they sit so close together that those on the outside have to rise first into the air before the birds in the interior are able to get enough air under their wings to admit of their rising directly from the sea.

Next in importance to Bougainville's Cormorant is the Pelican, known as *Pelecanus thagus*. These birds also nest in enormous flocks, which however, do not assemble so closely as the Cormorants. They often occupy great areas in the middle of Bougainville's Cormorants area, and are surrounded on all sides by the Cormorants. In the nesting season the two agree and are fairly harmonious together. The Pelicans also present a wonderful sight when they ascend. For the purpose of fishing they start off in long, narrow streams, but congregate on the fishing grounds in considerable crowds. Here they drop down into the sea like so many sacks.

When they are feeding some five or six thousand may be seen diving and fishing before they go home, having filled the great sacks with which Nature has furnished them under their lower beak. They are very much more timid than Bougainville's Cormorants. One can go close up to the nesting area of the latter without alarming them so that they fly away, but the Pelican is off before it is possible to draw very near.

There are two other species of Cormorant which are of smaller but still of considerable value. These are the Sea-Crow and Grimard's Cormorant (*P. nigra* and *P. cirriger*). The next most important birds are mostly on the Lobos Islands. They are two species of Gannet (*Sula variegata* and *S. nebouxi*), and, together with the Pelican, are the chief producers of guano on those islands. They do not sit in the same close array as the Cormorant. These Gannets are very interesting birds. Out of the breeding-season they are extremely timid, though when they are breeding they stand up for their nests and for their young. The young are beautiful little creatures, covered with the purest white down, resembling fluff. Dr. Forbes was able to get a number of photographic studies of the Gannets, which, when they go to fish, afford the most wonderful spectacle to be seen in that region. Flocks of them numbering from 10,000 to 20,000 at a time will be seen diving and then rising high into the air. They go down like so many rockets into the sea, which is ploughed up as if a fusillade were being fired into it.

The amount of fish consumed by these birds is gigantic. Each one of them will eat from eight to ten pounds a day. Dr. Forbes kept a number of them in captivity and fed them to determine how much guano would be produced on a diet of a certain kind of fish. He then calculated the relative proportion during the nesting season that each pair of birds with the young would deposit. In this way he was able to make a very close estimate of the quantity they would deposit in a period of, say, four years, and from that estimate he divided up the whole of the guano archipelago into zones. He made certain practical suggestions for the protection of the birds with a view to allowing them to deposit and to have a rigorous close season and also a period of rest in each of four years. Only one zone would be worked every year, thus leaving a period for recovery.

Another suggestion made by Dr. Forbes was that an endeavour should be made to remove the sharp points of the rocks upon which the birds alight, thereby increasing the surface area. During the nesting season the birds live on the islands and when it is over they frequent all the rocks which rise above the surface of the sea, but the latter are so precipitous that a large amount of the guano is lost, and Dr. Forbes believes that an enormous new collecting area might be added to that already existing by the adoption of the expedient proposed by him.

Proposed General Index to 'The Ibis.'—In response to the demand of some of the Members of the Union the Committee propose, if a sufficient number of Members will subscribe, to publish an index to the bird names in 7th, 8th, and 9th Series of 'The Ibis' (1895–1912). The last General Index of this kind was issued in 1897 and dealt with the 4th, 5th, and 6th Series (1877–1894), and consisted of two portions, a Subject Index and a Name Index. Since than a complete Subject Index has been issued for each completed series in the final volume of that series, but in order to obtain a reference to names of species it is necessary to look over the indices for each successive year.

The Name Index, edited by Mr. O. Salvin, and issued in 1897, was a very complete one, and each name was indexed under its specific and generic heading. This required a volume of 472 pages. Since then the general adoption of trinomials has taken place, and to index every name under generic, specific, and subspecific headings would make a most unwieldly and costly volume. The question to be settled, therefore, is whether the names should be indexed only under generic headings (as is the Annual Index at the end of each volume) or under specific headings, or under both, as in previous volumes, and in the case of subspecies should they be indexed three times under generic, specific, and subspecific headings, or only under two—generic and subspecific.

A circular has been issued to Members asking them to record their wishes in regard to this matter, and to subscribe to the Index on completion.

Forthcoming works.—Mr. John Henry Gurney, M.B.O.U., has just completed a monograph on the Gannet or Solan Goose. It will be published at the end of October by Messrs. Witherby at a subscription price of 25*s.*

The Gannet is notable not only for its life-history, but also for its antiquarian interest, and Mr. Gurney has been occupied in studying and collecting information on the subject for many years, and has embodied his researches in the present work, which will be illustrated with coloured plates, maps, and drawings, and will doubtless appeal to many of our Members.

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